Innovation In and Out of Parlour

Digital Feeder Control Manual

06-2080 - 12/24vDC Switching Positive
06-2085 - 12/24vDC Switching Negative or 12/24vAC

Version 3.10

Date - February 2016

Part Number - 39-0050

Manual Versions

Version 1.00 - March 2010	First Version of Manual (Software v3.00)
Version 2.00 - November 2015	Second version of Manual (Software v3.28)
Version 3.00 - January 2016	Third version of Manual (Software v3.34)
Version 3.10 - February 2016	Fourth version of Manual (Software v3.34)

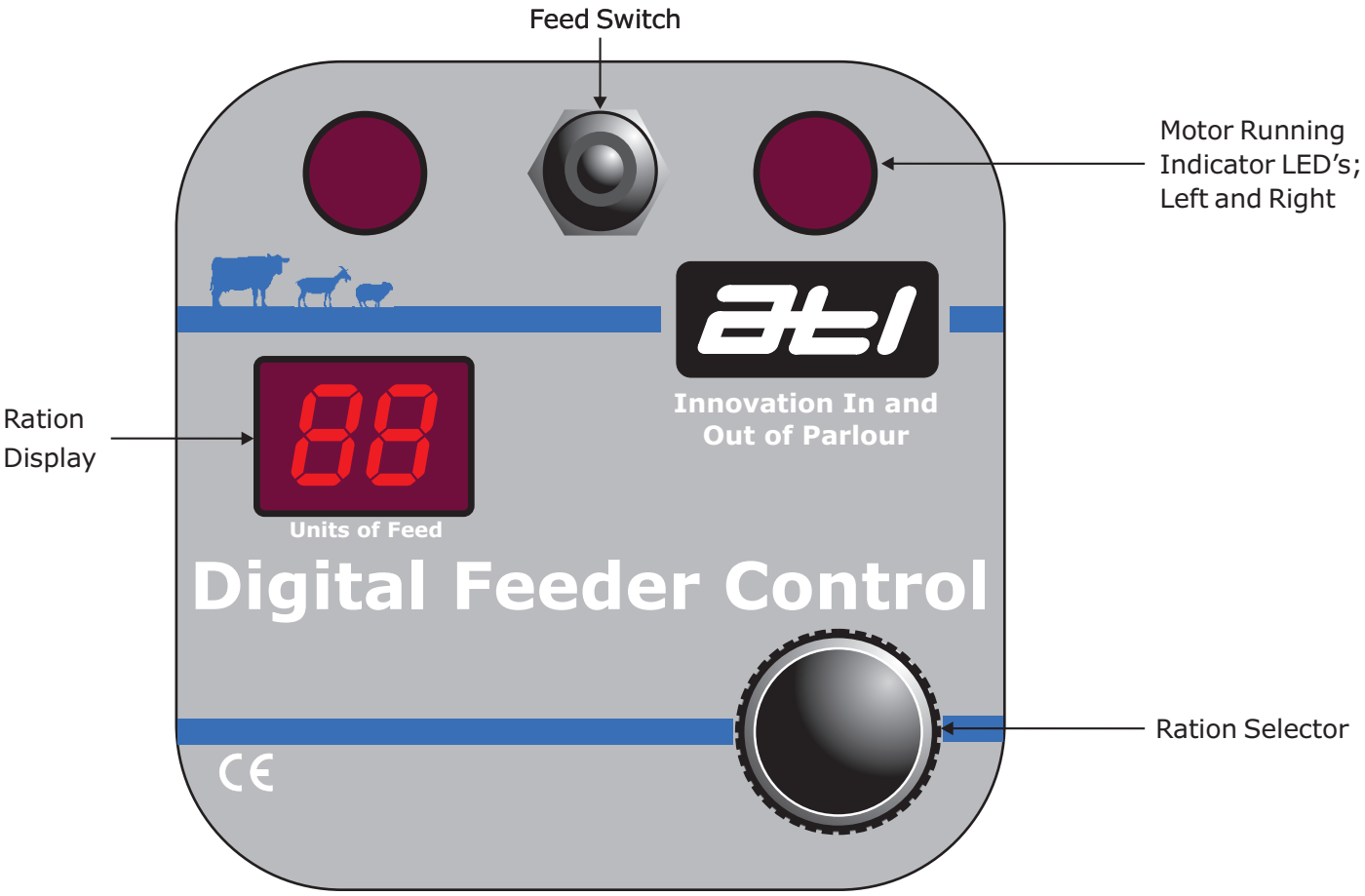
INDEX **PAGE**

Good Installation Practice: Adopting good engineering practice during installation will avoid most problems with electronic control systems.

- Check the existing wiring carefully. Do not assume that it will be up to the required standard. It may have been extended with thinner wire and be unable to carry the current without a volt drop.
- Termination of cables in enclosures. Do not coil excess cable in enclosures. Loops are good transmitters of interference.
- Do not use a single aperture gland for several cables. Moisture can migrate through the gaps between the cables and cause damage to internal electronic components. Moisture damage caused in this way is not covered under warranty.
- Never run cables which are connected to ATL control units alongside mains cables. Even if they have been disconnected, they can still be carrying and transmitting interference.
- Do not place data or coaxial cables connected to ATL control units within existing conduits with other cables connected to other systems; especially unsmoothed power cables. This is a prime source of interference especially if connected to pulsators or feeder motors without diodes installed. NB - When a solenoid coil is switched off the reverse voltage is generally 10 times the peak supply voltage, with a 24vDC supply, this can be in excess of 300 volts.
- Interference is most likely on mains systems which exhibit volt drops when the parlour load is switched on.
- Variable speed drives are becoming very common. Make sure that they are installed to the manufacturers instructions. Screened cable must be used between the drive and any motors, if not electronic systems can be affected.
- RFID antennas are looking for signals around 130Khz. Variable speed drives often operate at frequencies around this value. Good installation of the variable speed drive circuit is essential to prevent Interference.
- Mains earth supplies can be a source of interference. Check the voltage between the mains earth and the neutral. If there is a voltage above 3-4volts, there is a possibility that interference will be present. Earth problems of this nature can usually be avoided by fitting earth trips and separate earth electrode, which is isolated from the mains earth system.

About the Digital Feeder Control

The Digital Feeder Control is a simple and easy-to-use ration feeder control. It can be connected to either a single feeder, an ATL abreast feeder with automatic feed flaps or two feeders, one on each side of the parlour. Setting up is quick and easy. Feeding with the control is quick. Just turn the dial to select the number of portions required for a cow, flick the feed switch and it's done.



Digital Feeder Control Features:

- Individual feeder calibration.
- Automatic overload shutdown and reset with indicators.
- Wide ration range from 1 to 99.
- Large, bright feeder running and parlour side indicators.
- Suitable for vacuum or electric feeders in any parlour layout.
- Standard feeder switching voltage (+) positive12/24vDC.
- Other versions for (-) negative switching 12/24vDC and 12/24vAC feeders.

Installation

Installing the Power Supply(s)

The power supply(s) must be provided with a clean 230volt mains supply. Avoid sharing an outlet with another load. Use a switched, fused outlet not a 13Amp plug and socket. Position the Digital Feeder Control(s) as high as possible away from moisture and splashes but within easy, convenient reach. Cable runs should be as short as possible.

Wiring the Digital Feeder Controls to the Power Supply(s)

The DC supply to the Controls (and the Timing Pulse cable - only on older power supplies) may occupy the same conduit, but must be kept separate from the feeder, milk pump and pulsator supplies. Cables should be at least 500mm from mains cabling and as far away from fluorescent lights as possible (they can interfere with the Timing Pulse on older power supplies). Please note that the timing pulse is internal on part number 06-2080 and is therefore not required.

Always use the cable entries along the bottom edge of the Control casing. Although some of the diagrams show entry to the side or top of the case, this is for clarity only and must be avoided.

Do not position the Controls along a straight run of conduit- use 'T' connectors. Straight runs create unimpeded air paths and moisture can be deposited inside the Controls.

Err on the generous side for cable sizes. Minimum recommendations are:

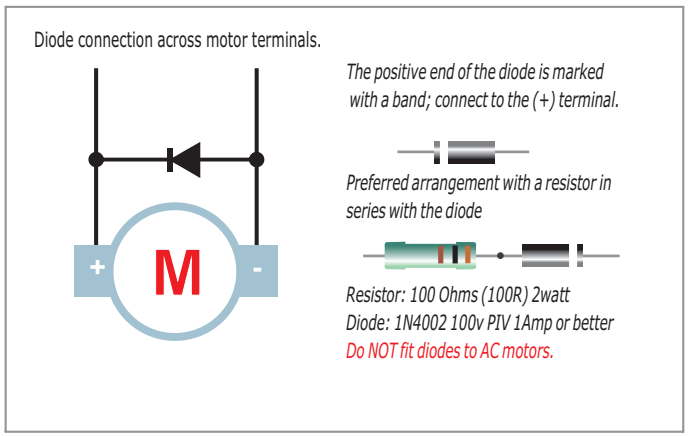
- 2.5mm csa for DC power supplies to Digital Feeder Control.
- 1.5mm csa for Digital Control to Feeder Motors.
- 0.5mm csa for Timing Pulse supply to Control.

A single run of 2.5mm csa cable from the power supply will provide sufficient power for up to 6 Controls. Additional Controls will require a further cable run back to the power supply. Multiple outlets are provided for both (+) and (-) cables on ATL power supplies. Arrange the cable neatly inside the Control casing. Never loop or coil spare cable- cut it to the correct length.

If new Controls are replacing the older mechanical type, check the existing connections cutting away any 'blackened' cable before fitting the cables. The connector configurations are different between old mechanical and new digital types (Data Sheet 8A).

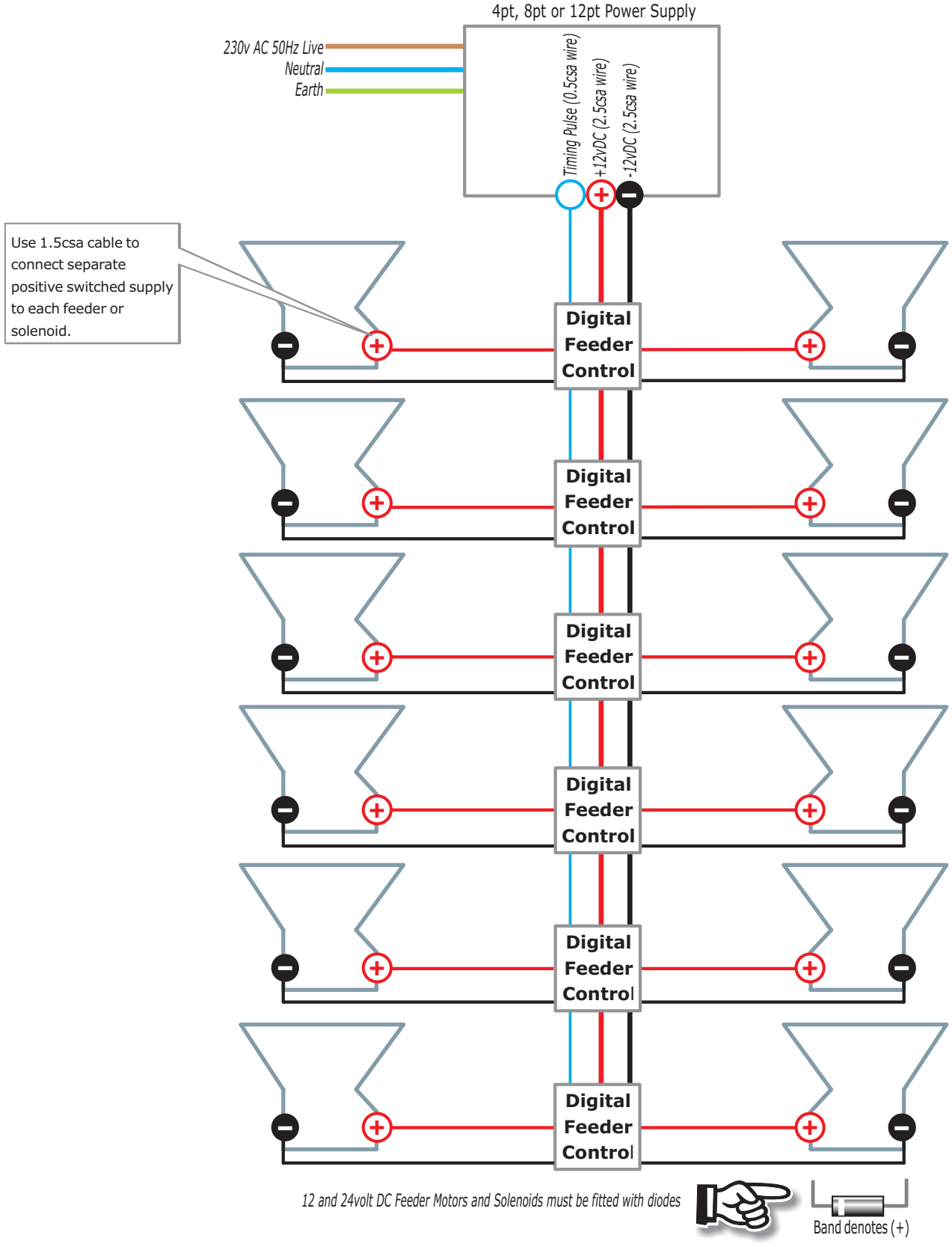
Fitting Diodes to Other Manufacturers Feeder Motors

Diodes MUST be fitted across low voltage (12 or 24volt) DC feeder motors or solenoid terminals. ATL feeders already have these fitted as standard; most other makes do not. Running a motor without a diode fitted will expose the Control circuitry to back emf, which could cause irreparable damage and will certainly void the warranty. Do not fit diodes to high voltage - 110 or 230volt motors or any motor operating with an AC supply. See diagram above.



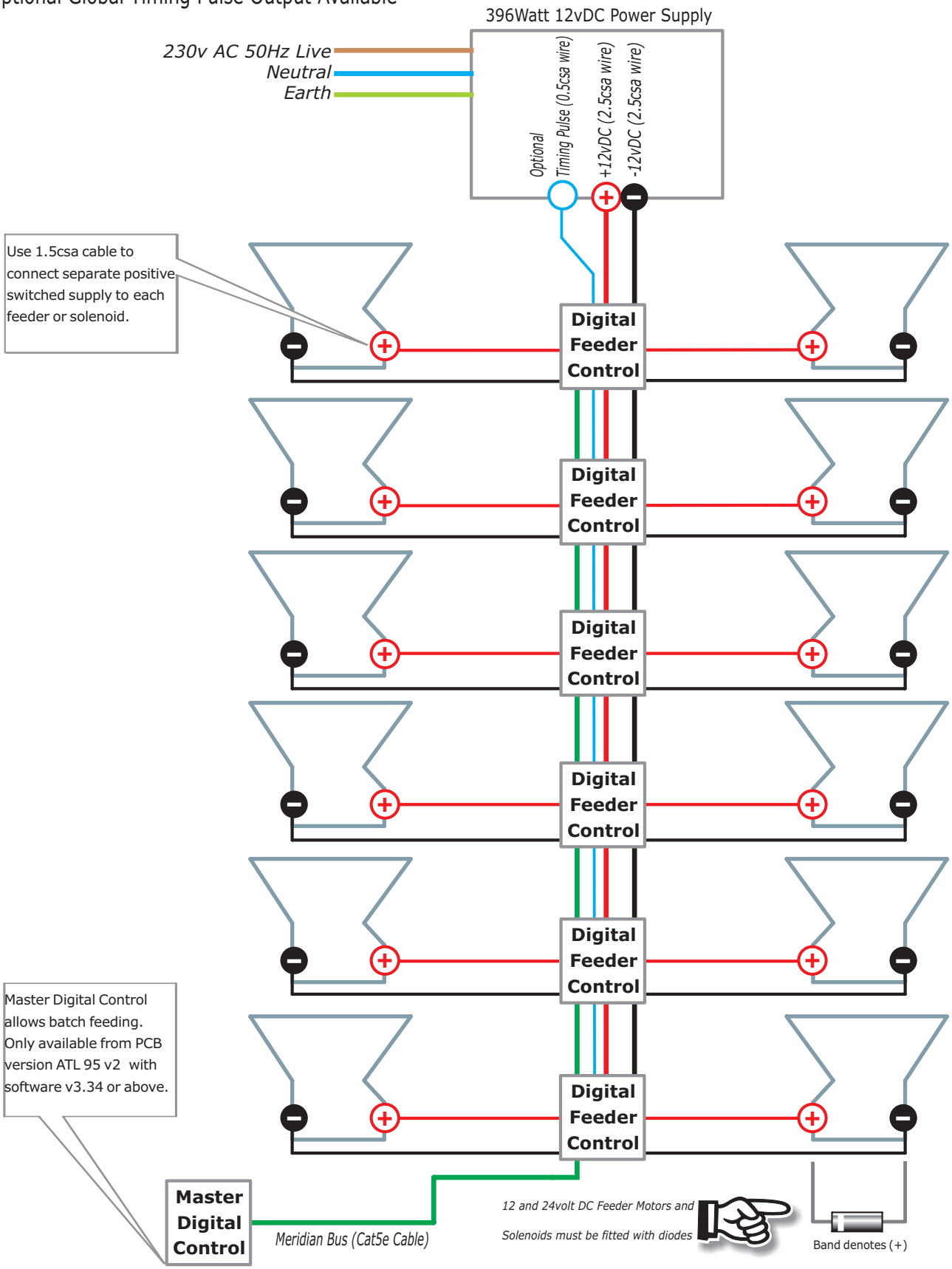
The Control can operate both electric and vacuum feeders; 12 volt DC electric motor feeders are supplied directly from the control, whereas vacuum feeders are operated via a solenoid valve. 12/24vDC switching negative and 12/24vAC feeders can be operated by a non-standard Control. The part number is 06-2085.

4pt, 8pt or 12pt Power Supply, Digital Control and Feeder connections on Herringbone Parlour:

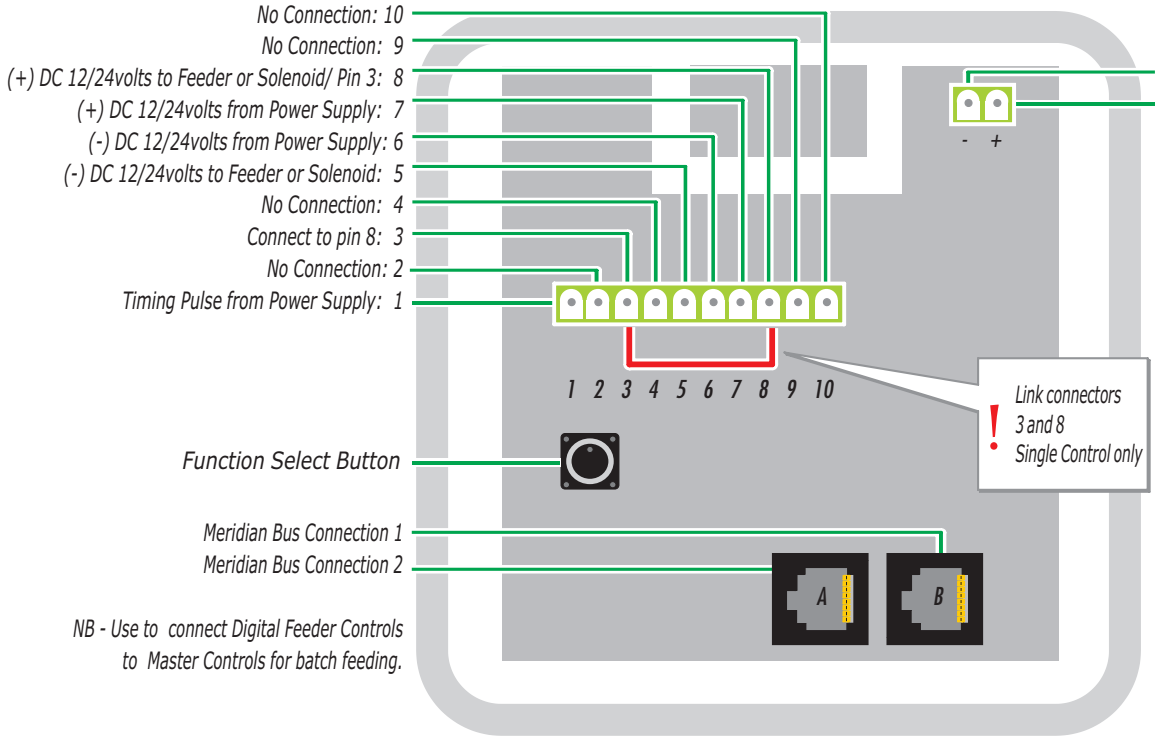


396 Watt 12vDC Power Supply, Digital Control and Feeder connections on Herringbone Parlour:

Optional Global Timing Pulse Output Available



Single Feeder Connection - Herringbone Parlour:

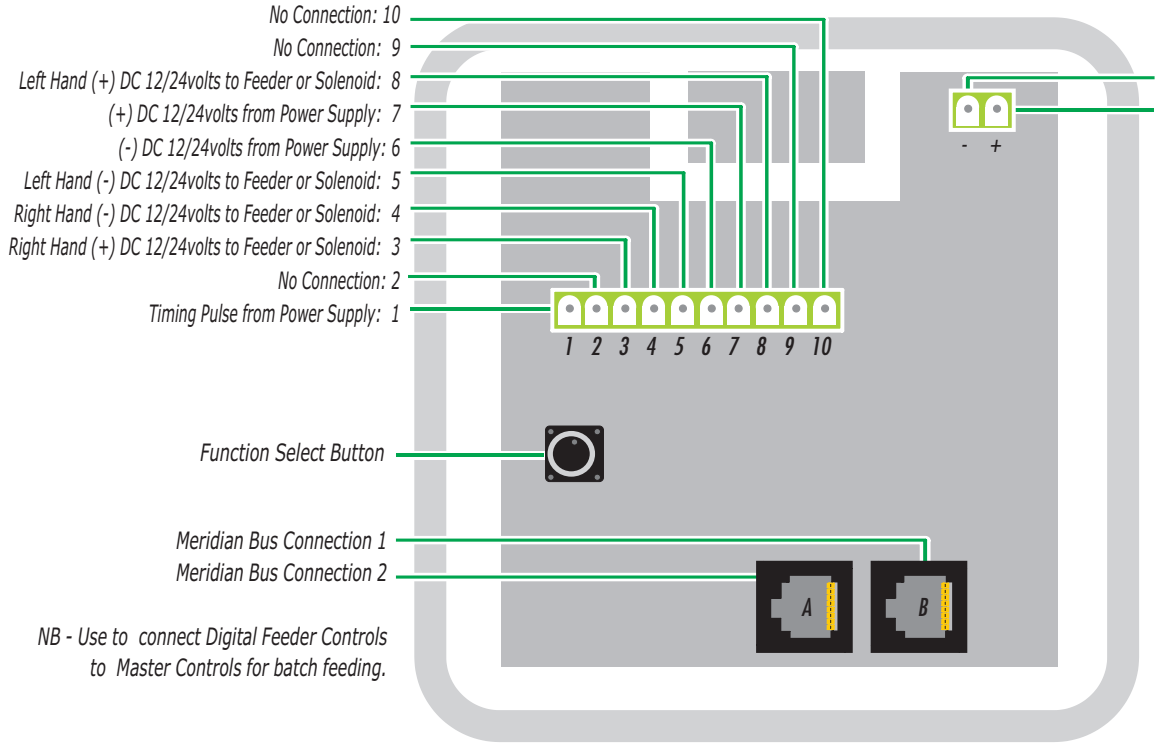


For Rotary Parlours Only

From table reverse circuit. The output is ON when the table reversing.

NB - If table reverse output is not 12/24volts DC, please contact ATL.

Double Feeder Connections - Herringbone Parlour:



For Rotary Parlours Only

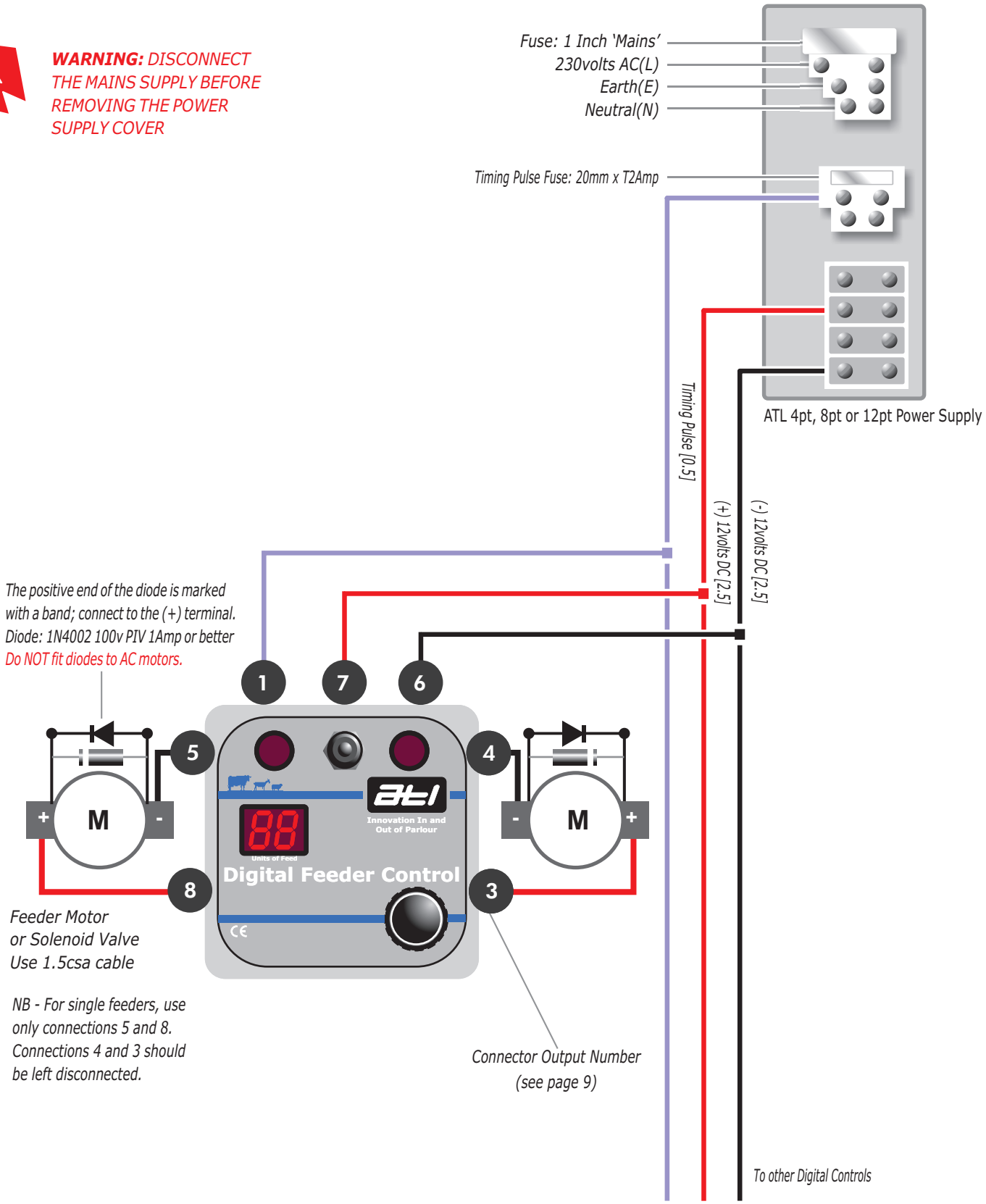
From table reverse circuit. The output is ON when the table reversing.

NB - If table reverse output is not 12/24volts DC, please contact ATL.

Herringbone Parlour Connections for Switched Positive Feeders with 4pt, 8pt or 12pt Power Supply

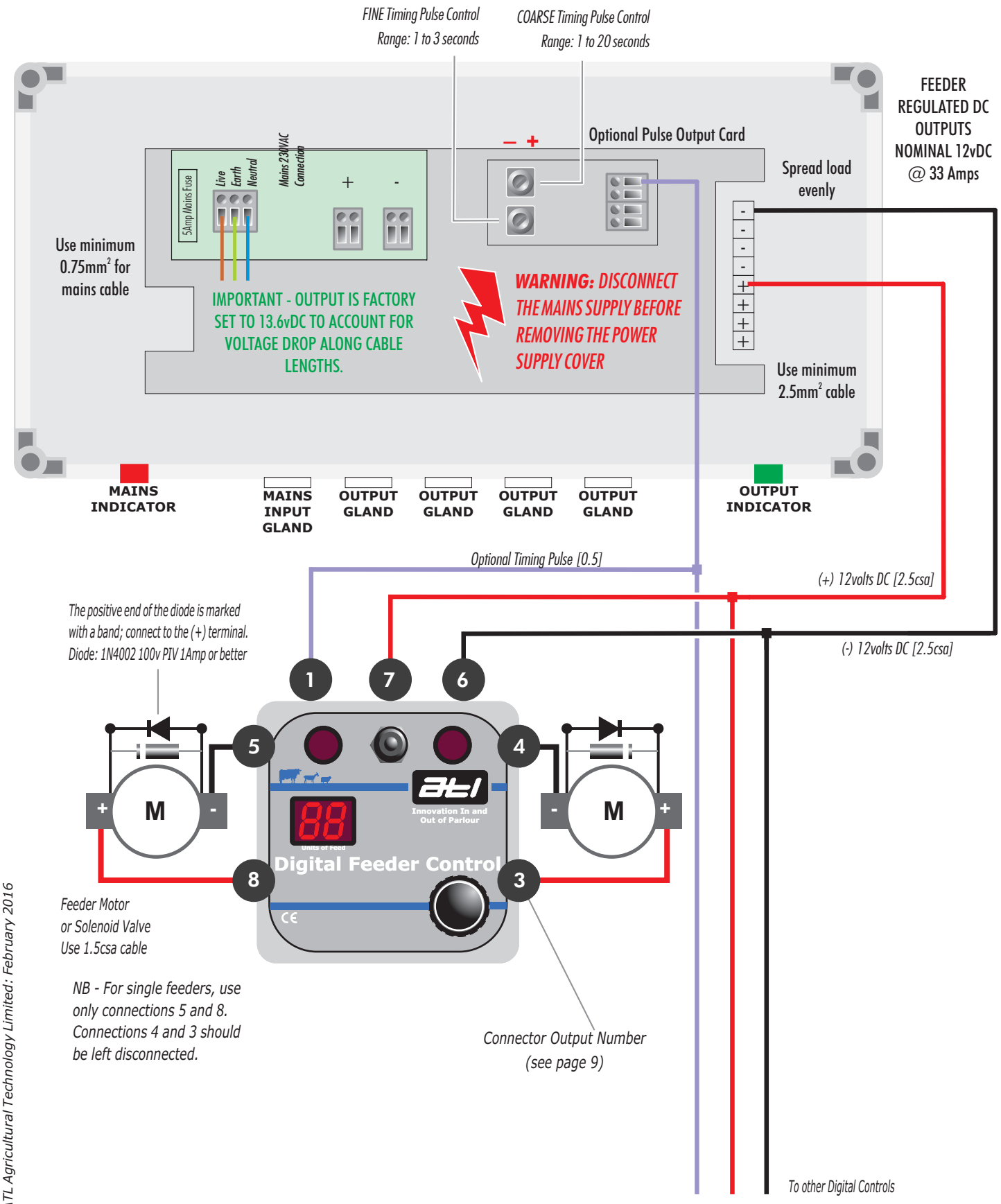
Figures in square brackets refer to minimum cable csa (mm^2).

WARNING: *DISCONNECT THE MAINS SUPPLY BEFORE REMOVING THE POWER SUPPLY COVER*



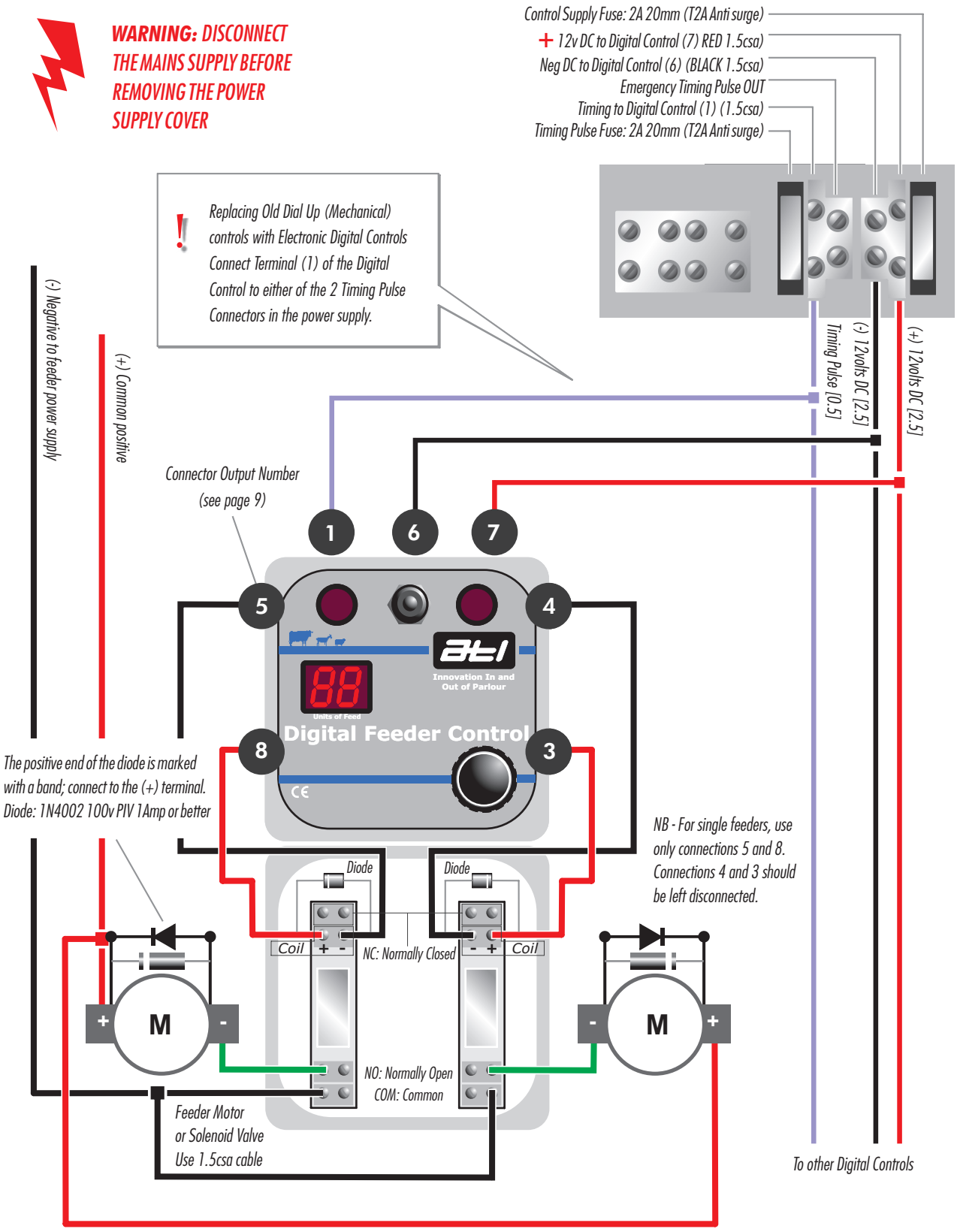
Herringbone Parlour Connections for Switched Positive Feeders with 396 Watt 12vDC Power Supply (ATL Feeders)

Figures in square brackets refer to minimum cable csa (mm^2).



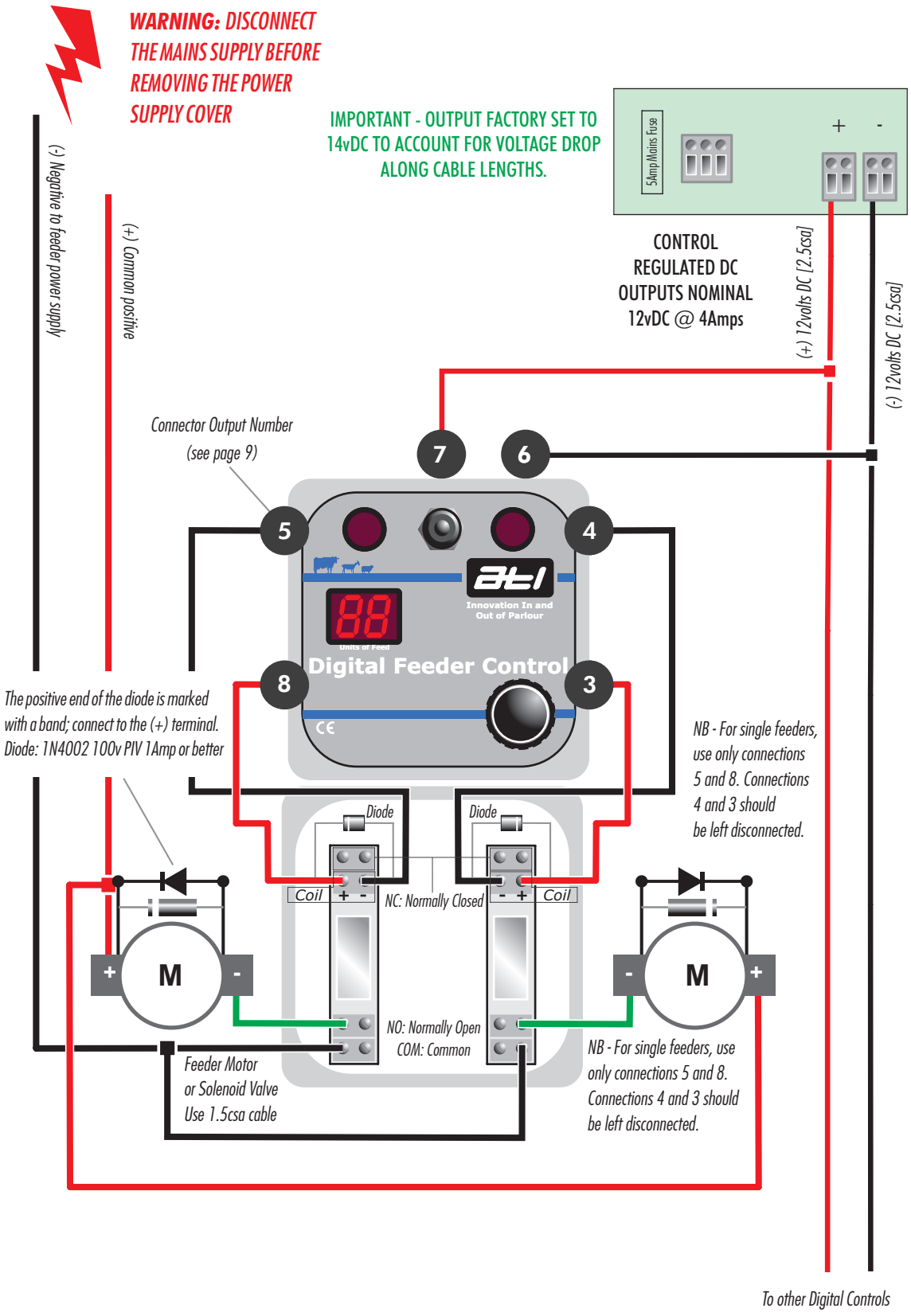
Herringbone Parlour Connections for Switched Negative Feeders with Control Only Power Supply

Figures in square brackets refer to minimum cable csa (mm^2).



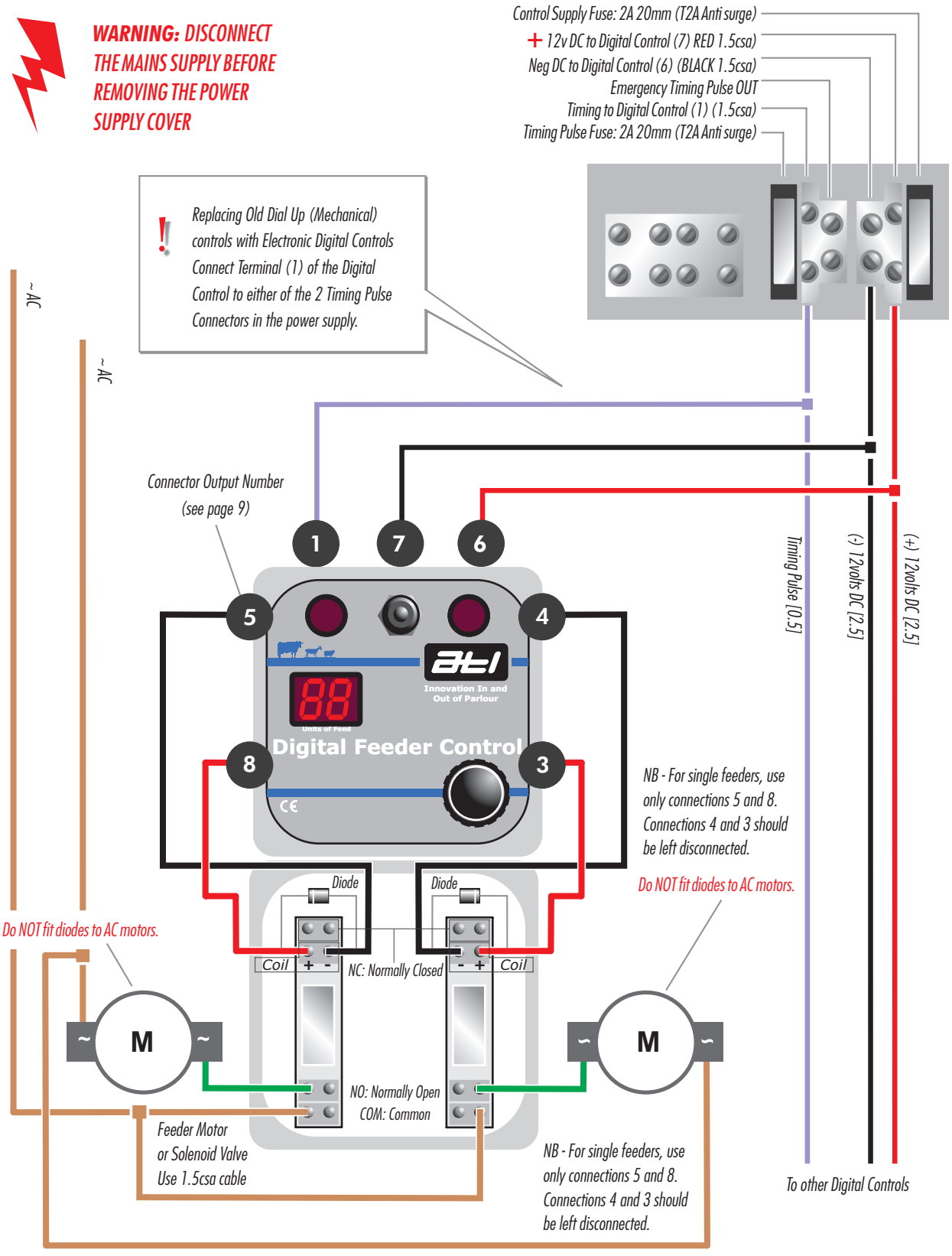
Herringbone Parlour Connections for Switched Negative Feeders with 60 Watt 12vDC Power Supply

Figures in square brackets refer to minimum cable csa (mm^2).



Herringbone Parlour Connections for AC Feeders with Control Only Power Supply

Figures in square brackets refer to minimum cable csa (mm^2).

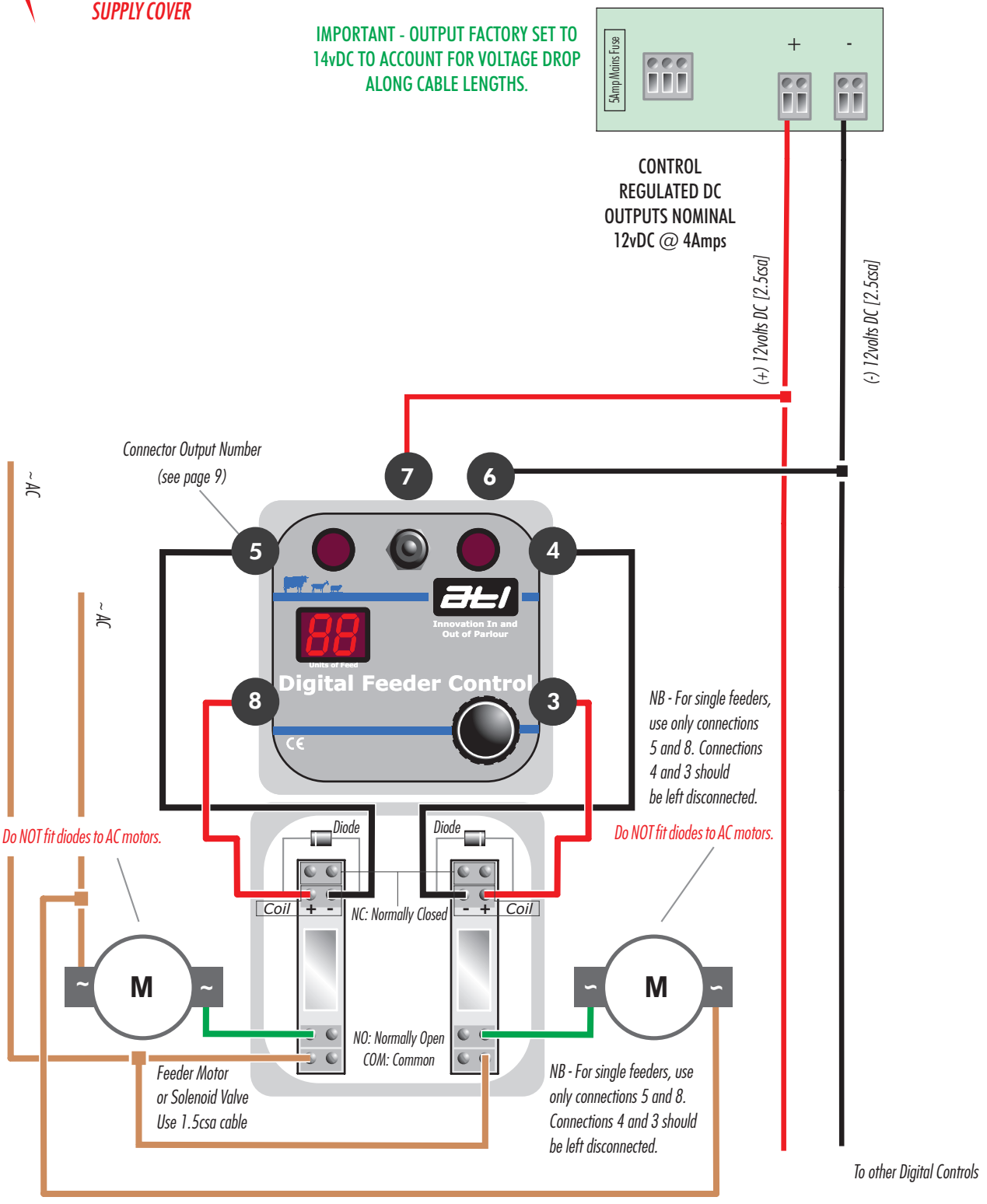


Herringbone Parlour Connections on AC Feeders with 60 Watt 12vDC Power Supply

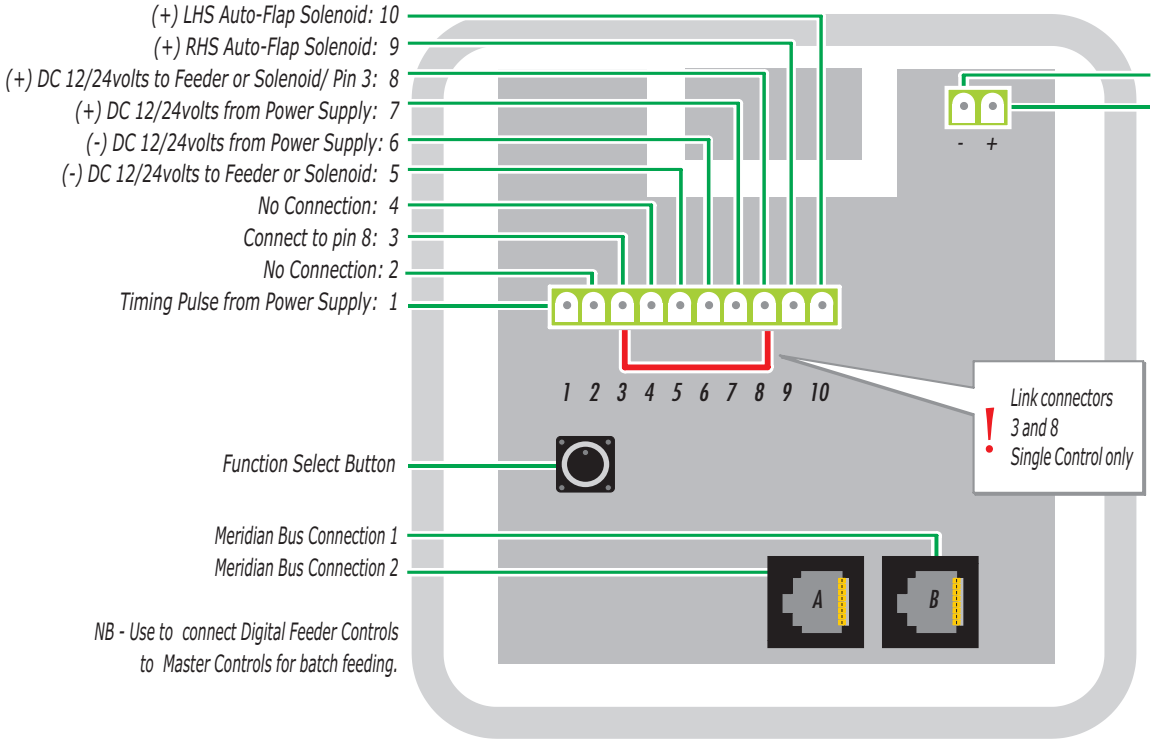
Figures in square brackets refer to minimum cable csa (mm^2).

***WARNING:** DISCONNECT THE MAINS SUPPLY BEFORE REMOVING THE POWER SUPPLY COVER*

IMPORTANT - OUTPUT FACTORY SET TO 14vDC TO ACCOUNT FOR VOLTAGE DROP ALONG CABLE LENGTHS.



Single Abreast Feeder with Auto-Flap Connections:

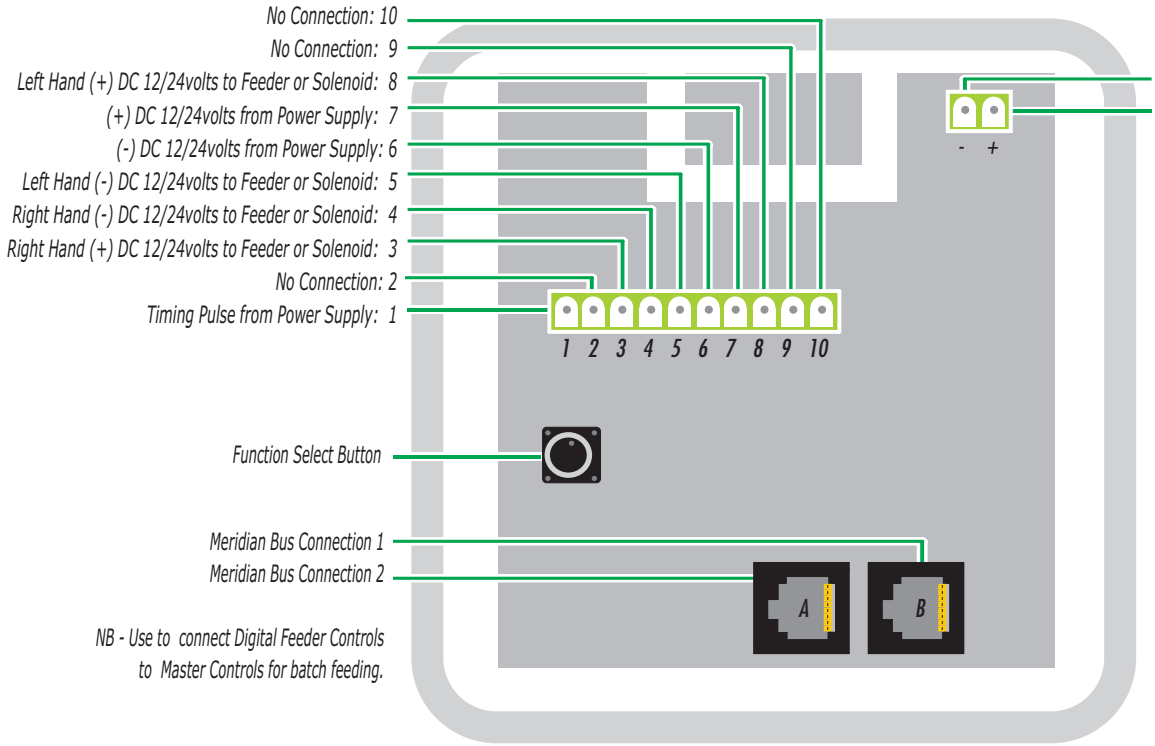


For Rotary Parlours Only

From table reverse circuit. The output is ON when the table reversing.

NB - If table reverse output is not 12/24volts DC, please contact ATL.

Double Abreast Feeder Connections:



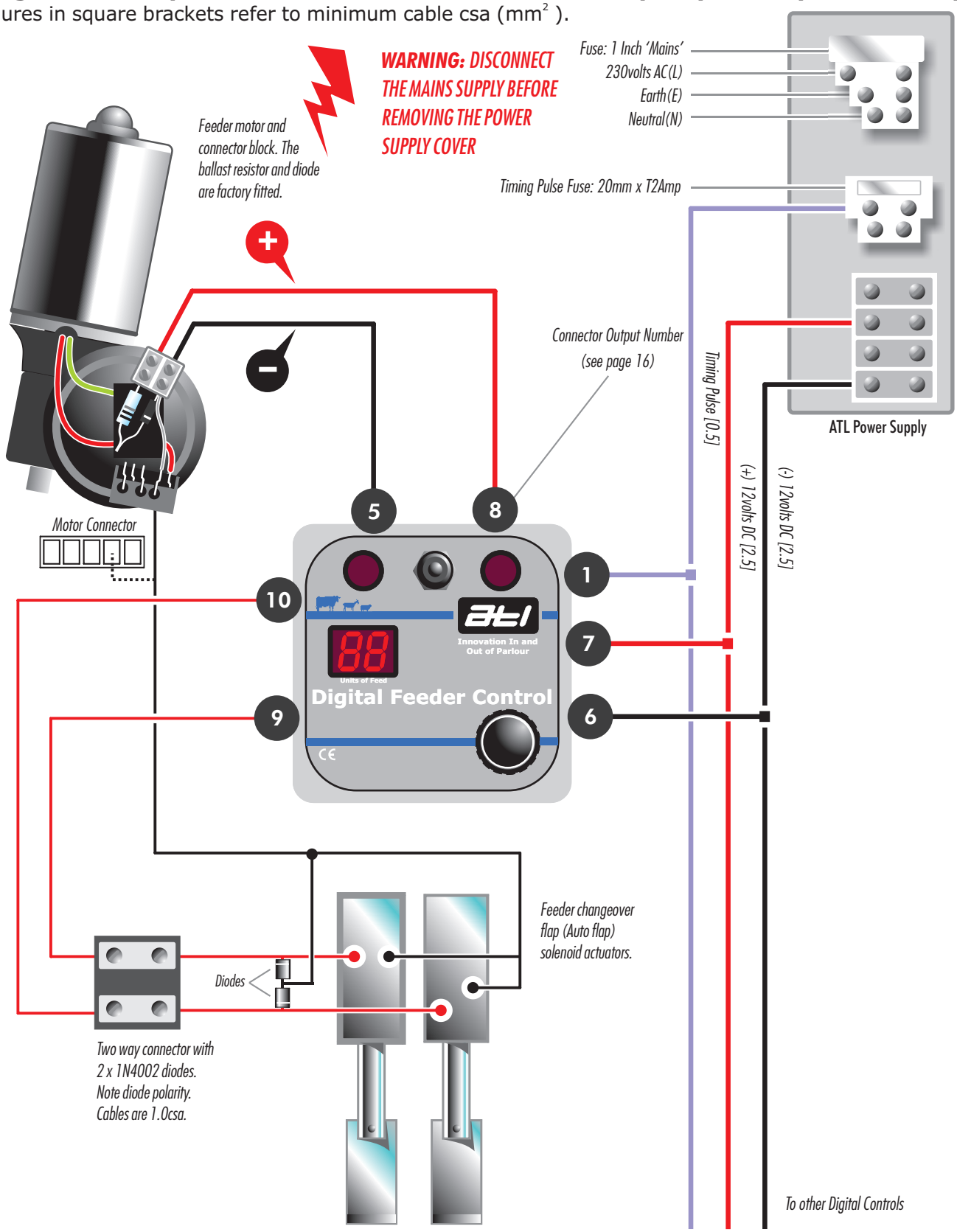
For Rotary Parlours Only

From table reverse circuit. The output is ON when the table reversing.

NB - If table reverse output is not 12/24volts DC, please contact ATL.

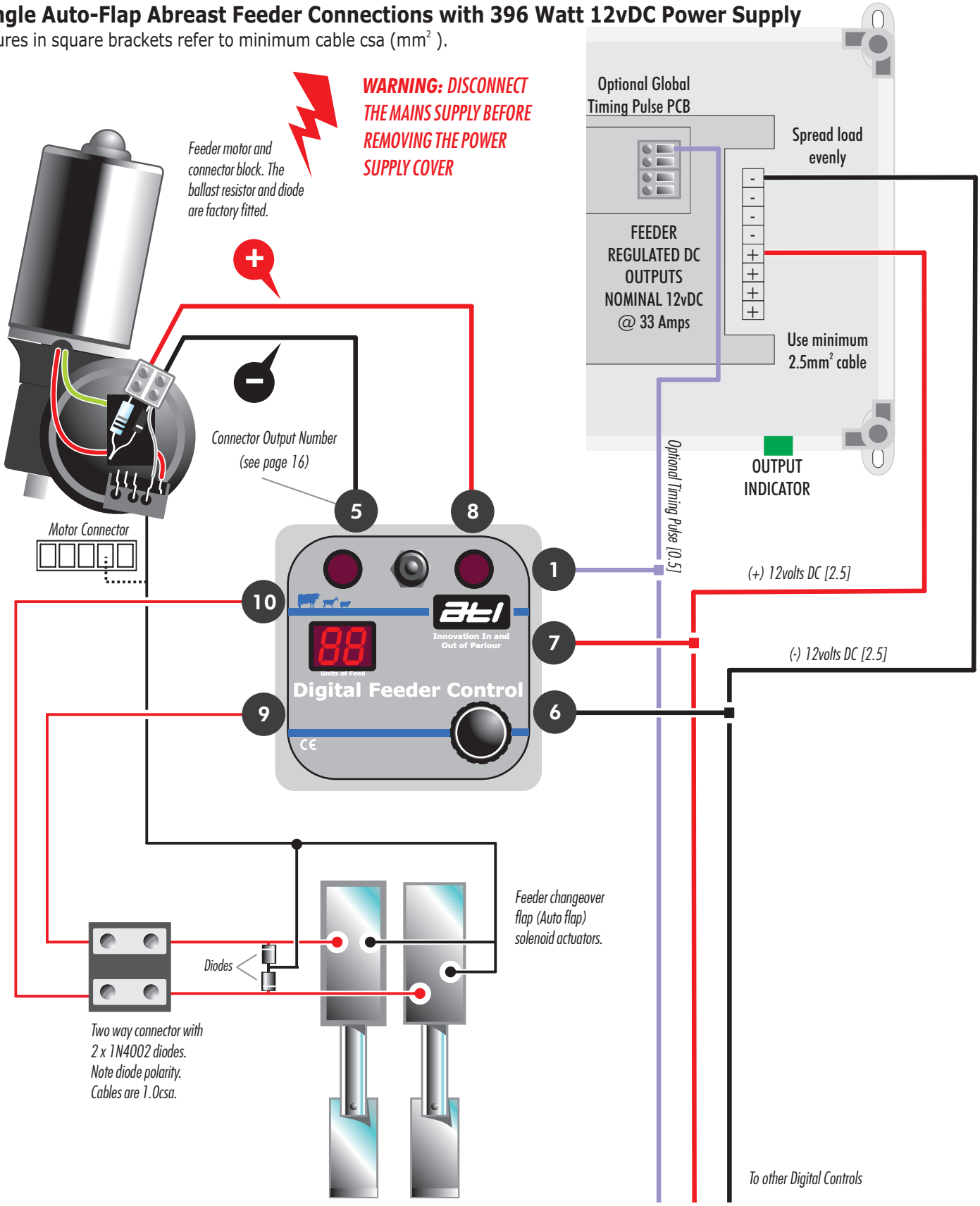
Single Auto-Flap Abreast Feeder Connections with 4pt, 8pt or 12pt Power Supply

Figures in square brackets refer to minimum cable csa (mm^2).



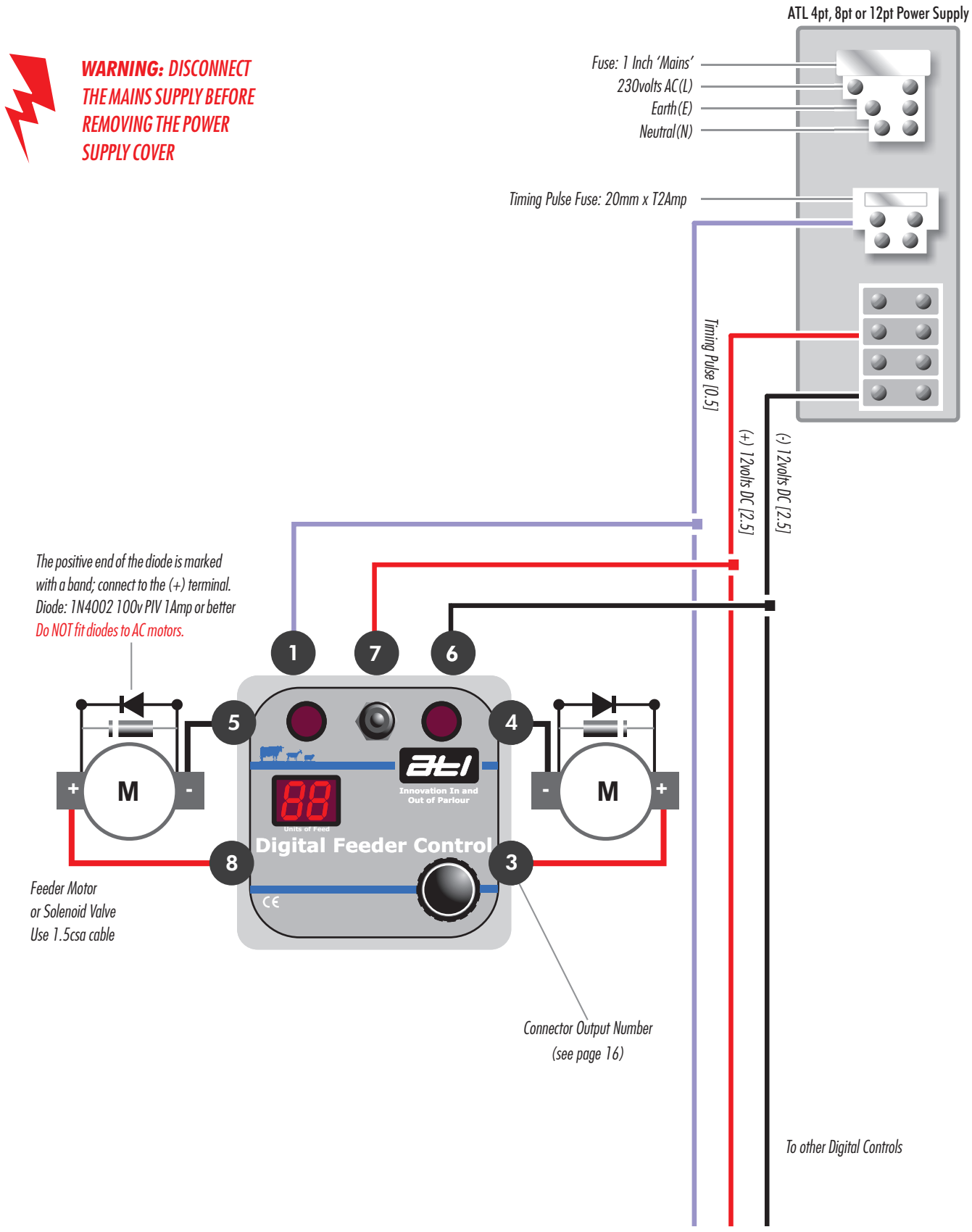
Single Auto-Flap Abreast Feeder Connections with 396 Watt 12vDC Power Supply

Figures in square brackets refer to minimum cable csa (mm^2).



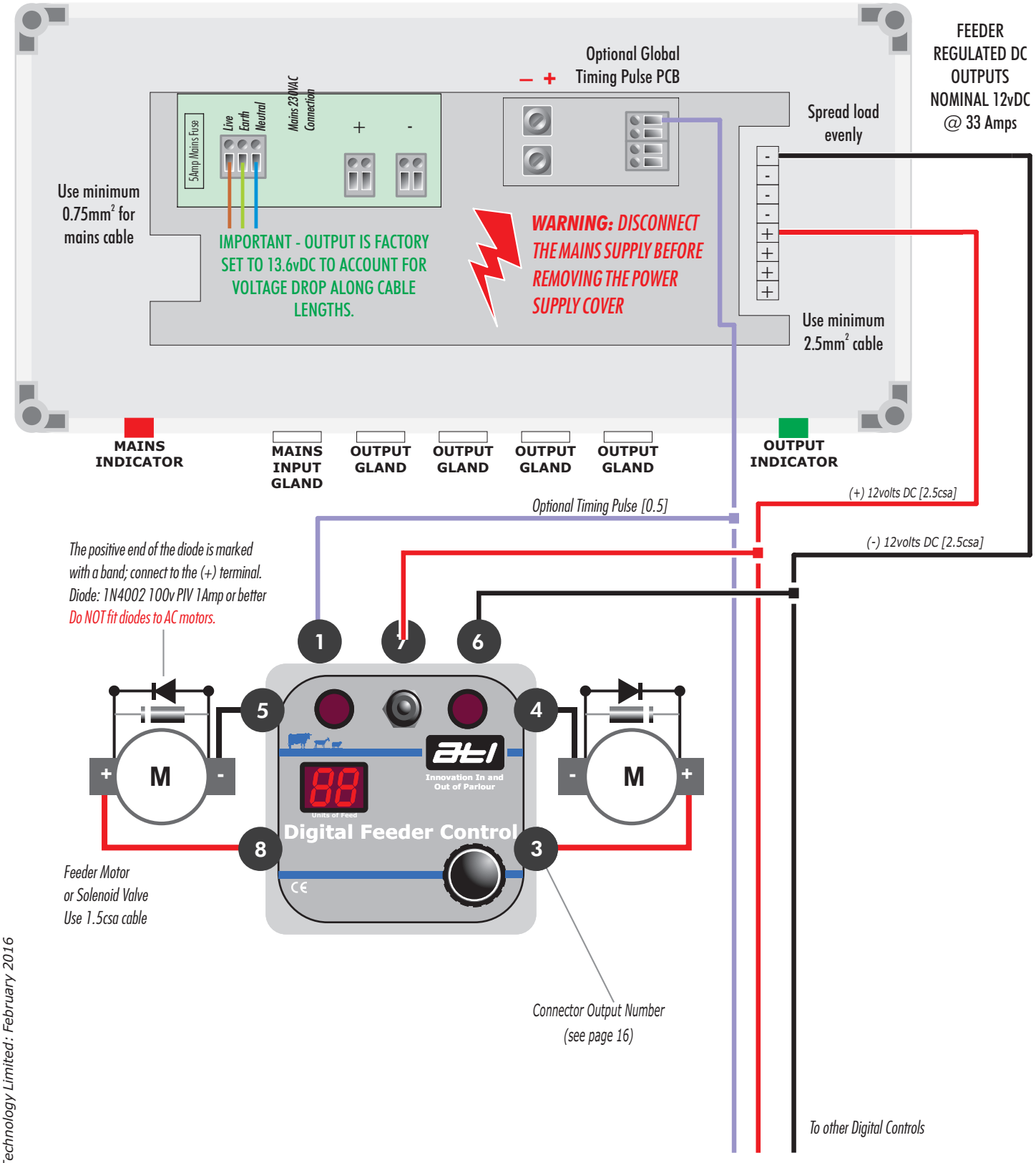
Double Abreast Feeder Connections with 4pt, 8pt or 12pt Power Supply

Figures in square brackets refer to minimum cable csa (mm^2).



Double Abreast Feeder Connections with 396 Watt 12vDC Power Supply

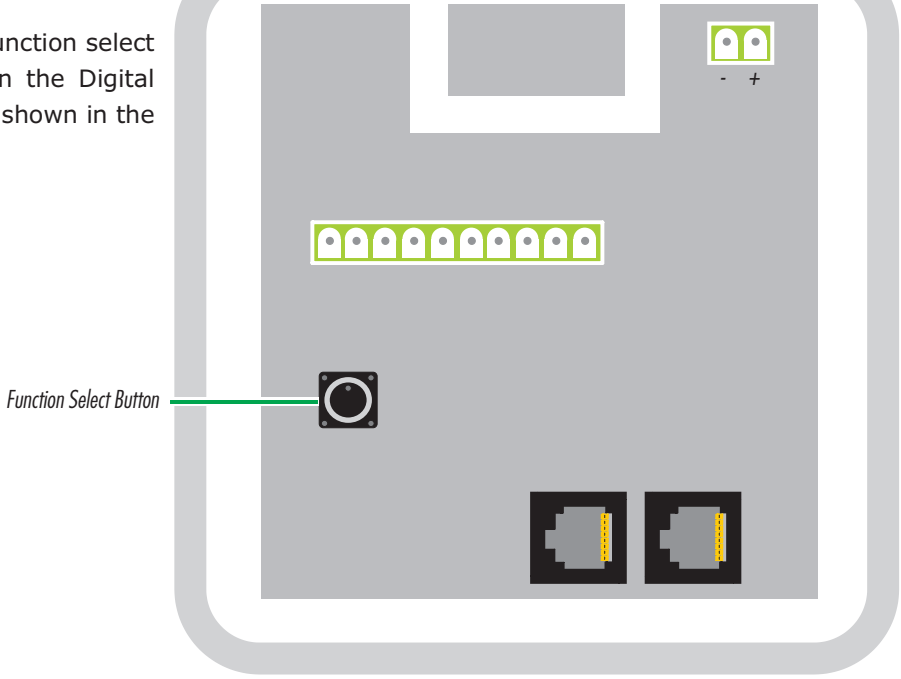
Figures in square brackets refer to minimum cable csa (mm^2).



Setting up the Digital Feeder Control 1

Entering Setup Mode:

To enter the setup mode, please press the function select button once on the printed circuit board in the Digital Feeder Control enclosure and 'Cn' should be shown in the ration display window.



Master Control: On / Off: default: Off

Enter the setup mode, by pressing the function select button once.

- 'Cn' will be shown in the ration display window;
- Only change this to 'CY' if setting up a master control. For more information on this, see pages 27, 28 and 29.

Setting The Control Address: Default: 01

This sets the address of the Digital Feeder Control. This should be set so that the address mirrors the stall number. For example, the Digital Feeder Control that feeds stalls 1 on the left and right should have an address of 01, and the one that feeds stalls 2 on the left and right should have an address of 02.

- 'Ad' will flash alternately and then '01' if the address is set to 1;
- Rotate the ration selector clockwise to increase or anti-clockwise to decrease the address number;

Press the function select button to move onto the next setting.

Setting up the Digital Feeder Control 2

Setting the Feed Mode: F1 / F2 / F3: Default F1

NOTE: For Software Pre V3.30

The Digital Feeder Control has 3 feeding modes. These are:

F1 - When the feed switch is flicked, the counter will count down to zero (00), the ration display will stay at zero (00) and a new ration has to be dialled up to feed another ration.

F2 -When the feed switch is flicked, the counter will count down to zero (00), the ration display will then return to the previous ration value and is ready to feed another ration immediately.

F3 -Rotary mode. This enables individual feeding using the ATL dump box on a rotary parlour with a MicroMarque4 control connected. For more information, please see the Rotary Parlour Dump Box manual.

Select the feeding mode as follows:

- 'F1' will be shown in the ration display window;
- Rotate the ration selector clockwise once and 'F2' or rotate clockwise twice and 'F3' will be shown in the ration display window;
- Rotate the ration selector anti-clockwise to return to the previous feeder mode.

Press the function select button to move onto the next setting.

Setting the Feed Mode: F1 / F2: Default F1

NOTE: For Software Post V3.30

The Digital Feeder Control has 2 feeding modes. These are:

F1 - When the feed switch is flicked, the counter will count down to zero (00), the ration display will stay at zero (00) and a new ration has to be dialled up to feed another ration.

F2 -When the feed switch is flicked, the counter will count down to zero (00), the ration display will then return to the previous ration value and is ready to feed another ration immediately.

Select the feeding mode as follows:

- 'F1' will be shown in the ration display window;
- Rotate the ration selector clockwise once and 'F2' will be shown in the ration display window;
- Rotate the ration selector anti-clockwise to return to the previous feeder mode.

Press the function select button to move onto the next setting.

Setting up the Digital Feeder Control 3

Setting the Parlour Type: Hb / Ab / Ro: Default Hb

NOTE: For Software Post V3.30

The Digital Feeder Control supports 3 types of parlours.

These are:

Hb - The Herringbone Parlour: This parlour type has 2 feeder calibration settings, one for the left feeder and one for the right.

Ab - The Abreast Parlour: This parlour has one feeder calibration setting.

Ro - The Rotary Parlour: This enables individual feeding using the ATL dump box on a rotary parlour. For more information, please see the Rotary Parlour Dump Box manual.

Select the feeding mode as follows:

- 'Hb' will be shown in the ration display window;
- Rotate the ration selector clockwise once and 'Ab' or rotate clockwise twice and 'Ro' will be shown in the ration display window;
- Rotate the ration selector anti-clockwise to return to the previous parlour type.

Press the function select button to move onto the next setting.

Setting the Feeder Type: P0 / P1 / P2 / P4: Default P0

The Digital Feeder Control has 4 feeder types available. Timed electric and 1, 2, and 4 pulse.

P0 - Timed feeders;

P1 - 1 pulse feeders;

P2 - 2 pulse feeders;

P4 - 4 pulse feeders.

See table below for example pulsed feeder type settings. As a general guide, the major makes should be set as follows:

Manufacturer	Pulse(s)	Feed/Pulse(grms)
Fullwood Rationmaster	1 or 2	500
Alfa Laval	2 or 4	500
Orby	1	500
Somerset	4	100
Westfalia EP	1	700
Westfalia M Type	1 or 2	100

Select the feeder type as follows:

- 'P0' will be shown in the ration display window;
- Rotate the ration selector clockwise once and 'P1', rotate clockwise twice and 'P2', rotate clockwise three times and 'P4' will be shown in the ration display window;
- Rotate the ration selector anti-clockwise to return to the previous feeder type.

Press the function select button to move onto the next setting.

Setting up the Digital Feeder Control 4

Setting the Timing Pulse Source: Pi /PE: Default: Pi

A timing pulse is used to calibrate the feeders operated by the Digital Feeder Control. This is a clock pulse that ensures all feeders drop the same amount of feed. The global timing pulse sources are as follows:

Pi - Pulse Internal - For Digital Feeder Controls connected to 60 Watt or 396 Watt 12vDC power supplies.

PE - Pulse External - For Digital Feeder Controls connected to 4pt, 8pt or 12pt digital power supplies with global timing pulse (i.e. replacing a faulty control) and a single timing pulse cable links all of the controls together. See page 26 for calibration.

Select the timing pulse as follows:

- 'Pi' will be shown in the ration display window;
- Rotate the ration selector anti-clockwise once and 'PE' will be shown in the ration display window;

Press the function select button to either exit the setup routine if 'PE' selected or move onto calibrating the global timing pulse if 'Pi' selected.

Calibrating the Internal Timing Pulse: Default: 2.2

NOTE: For Software Pre V3.30 or Software Post V3.30 when using Abreast (Ab) and Rotary (Ro) Parlour Types

The internal timing pulse is used to calibrate the feeders. Depending upon whether the digital control is connected to timed or pulse feeders, each unit of 1 is equal to 0.1 seconds. NB - Setup allows calibration in tenths of seconds (i.e. 0.1) for calibration values less than 10 seconds and in seconds (i.e. 1) from 10 to 99 seconds.

P0 (Timed) -For timed feeder motors. Runs motor for 0.1 seconds.

P1 (1 Pulse) - Gives 1 'ON' pulse and 1 'OFF' period every 0.1 seconds.

P2 (2 Pulses) - Gives 2 'ON' pulses and 2 'OFF' periods every 0.1 seconds.

P4 (4 Pulses) - Gives 4 'ON' pulses and 4 'OFF' periods every 0.1 seconds.

Calibrate the internal timing pulse as follows (see note on calibration slides on page 26 before calibrating):

- Use the table on the next page, select the appropriate value for the internal timing pulse.
- Press the function select button to exit the Digital Feeder Control setup routine.
- Rotate the ration selector until the digit '4' is displayed in the ration display window.
- Flick the feed switch either left or right. The associated feeder motor should start and feed will be delivered.
- Weigh the quantity of feed delivered; if it is less than 2kg, go back into the setup routine and increase the internal timing pulse value. If it is greater than 2kg, decrease the internal timing pulse value. Repeat steps 1, 2 and 3 until the desired weight of feed is delivered.

This process should be repeated at any time when the feed formulation or density changes.

Press the function select button to move to the next setting.

Setting up the Digital Feeder Control 5

Calibrating the Internal Timing Pulse: Default: 2.2

NOTE: For Software Post V3.30 when using Herringbone (Hb) Parlour Types

The internal timing pulse is used to calibrate the feeders. There are two stored calibration values, one for the left feeder (CL) and one for the right feeder (Cr). Depending upon whether the digital control is connected to timed or pulse feeders, each unit of 1 is equal to 0.1 seconds. NB - Setup allows calibration in tenths of seconds (i.e. 0.1) for calibration values less than 10 seconds and in seconds (i.e. 1) from 10 to 99 seconds.

P0 (Timed) -For timed feeder motors. Runs motor for 0.1 seconds.

P1 (1 Pulse) - Gives 1 'ON' pulse and 1 'OFF' period every 0.1 seconds.

P2 (2 Pulses) - Gives 2 'ON' pulses and 2 'OFF' periods every 0.1 seconds.

P4 (4 Pulses) - Gives 4 'ON' pulses and 4 'OFF' periods every 0.1 seconds.

Calibrate the internal timing pulse as follows (see note on calibration slides on page 26 before calibrating):

- Use the table at the bottom of this page, select the appropriate value for the internal timing pulse for the left hand feeder.
- Press the function select button to exit the Digital Feeder Control setup routine.
- Rotate the ration selector until the digit '4' is displayed in the ration display window.
- Flick the feed switch either left or right. The associated feeder motor should start and feed will be delivered.
- Weigh the quantity of feed delivered; if it is less than 2kg, go back into the setup routine and increase the internal timing pulse value. If it is greater than 2kg, decrease the internal timing pulse value. Repeat steps 1, 2 and 3 until the desired weight of feed is delivered.

This process should be repeated at any time when the feed formulation or density changes.

Press the function select button to repeat the process for the right hand feeder.

Timed Electric Feeders.

A broad indication of running time per 500grms of feed delivered for motorised feeders is:

Manufacturer	Voltage	Running (Secs)	Calibration Setting
ATL	12	2.2	2.2
Gascoigne	12	5.0	5.0
Hosier	12	1.5	1.5
Simplex Aluminium	12	2.0	2.0
Westfalia EZ (Early)	24	21.0	21
Westfalia EZ (Late)	24	12.0	12
Westfalia M Type	24	5.0	5.0
Fullwood Augermaster	24	15.0	15

Setting up the Digital Feeder Control 6

Finishing the Setup Process

Once the setup routine has been carried out on the first Digital Control, it should be carried out on the remaining Digital Controls in the system. If the internal timing pulse has been used, enter the same values in the remaining controls

Feeder Calibration Slides

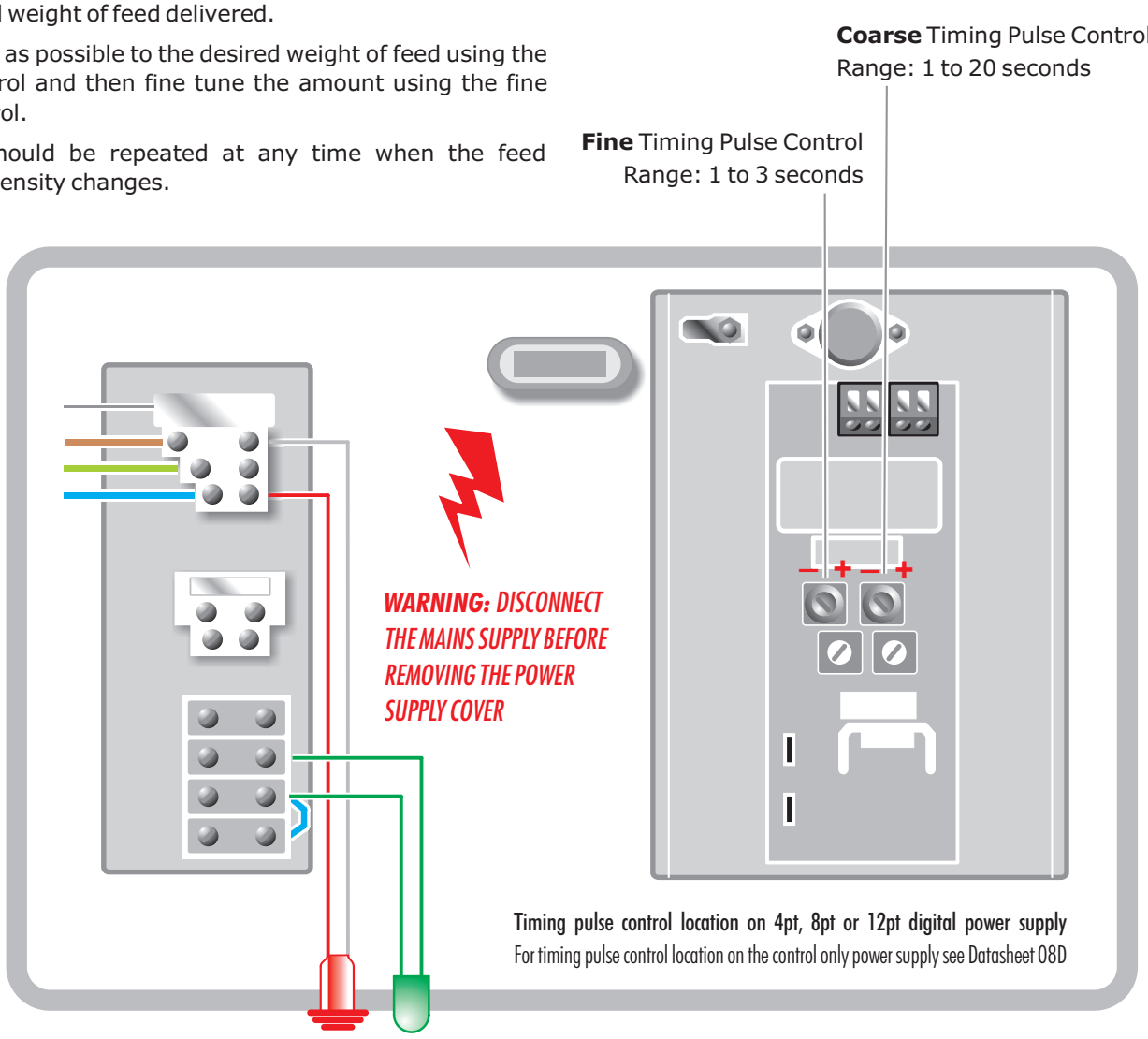
ATL and some other manufacturers, fit a slide to the feeder outlet which can be positioned to restrict the delivery of feed to the chute- a simple form of calibration. Make sure that calibration using the slides has been carried out in accordance with the feeder installation manual before setting the Timing Pulse.

Calibrating the Global Timing Pulse

This is only relevant for Digital Feeder Controls connected to 4pt, 8pt or 12pt digital power supplies with global timing pulse, or 396 watt power supplies with the optional pulse timing pcb and the timing pulse source has been set to external.

- Set both the course and fine global timing pulse controls in the power supply to their mid-point;
- Turn the power ON and rotate the ration selector until the digit '4' is displayed in the ration display window.
- Flick the feed switch either left or right. The associated feeder motor should start and feed will be delivered.
- Weigh the quantity of feed delivered; if it is less than 2kg, turn the coarse timing control clockwise. If it is greater than 2kg, turn the coarse timing control anti-clockwise. Repeat process until desired weight of feed delivered.
- Get as close as possible to the desired weight of feed using the coarse control and then fine tune the amount using the fine timing control.

This process should be repeated at any time when the feed formulation or density changes.

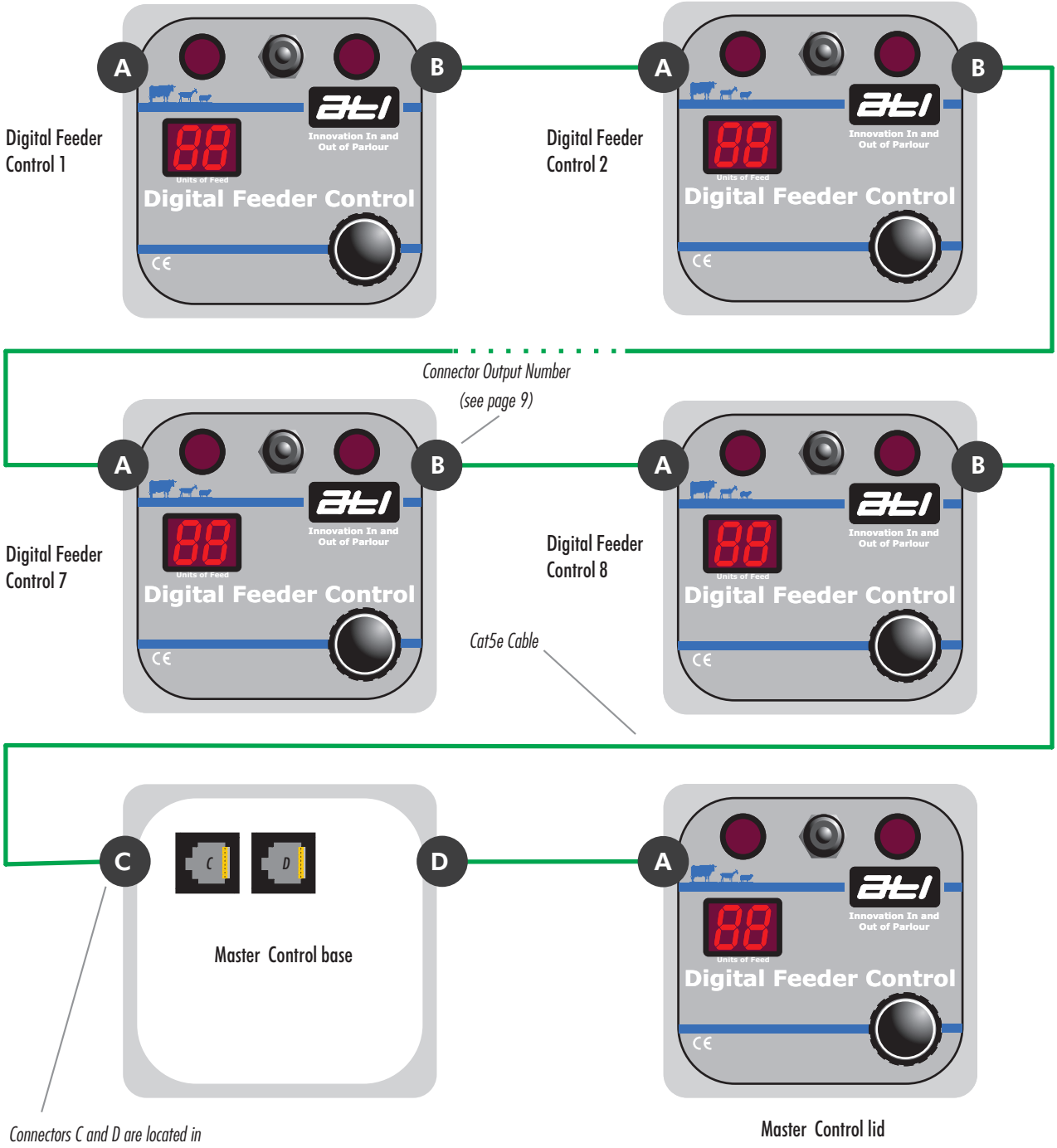


Timing pulse control location on 4pt, 8pt or 12pt digital power supply
For timing pulse control location on the control only power supply see Datasheet 08D

About the Master Control

The Master Control is a completely separate control that is connected to Digital Feeder Controls via Cat5e cable. It enables the user to batch feed identical rations to all the feeders on either the left or right-hand side at the same time. The diagram below shows how the Digital Feeder Controls are connected (daisy-chained) together using Cat5e cable.

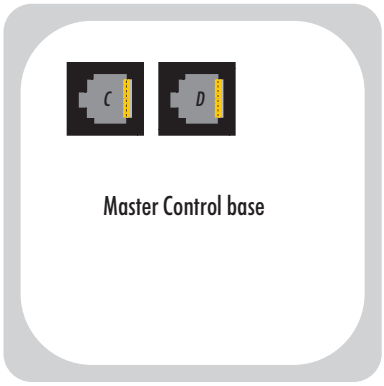
Meridian Bus Connections for Master Control

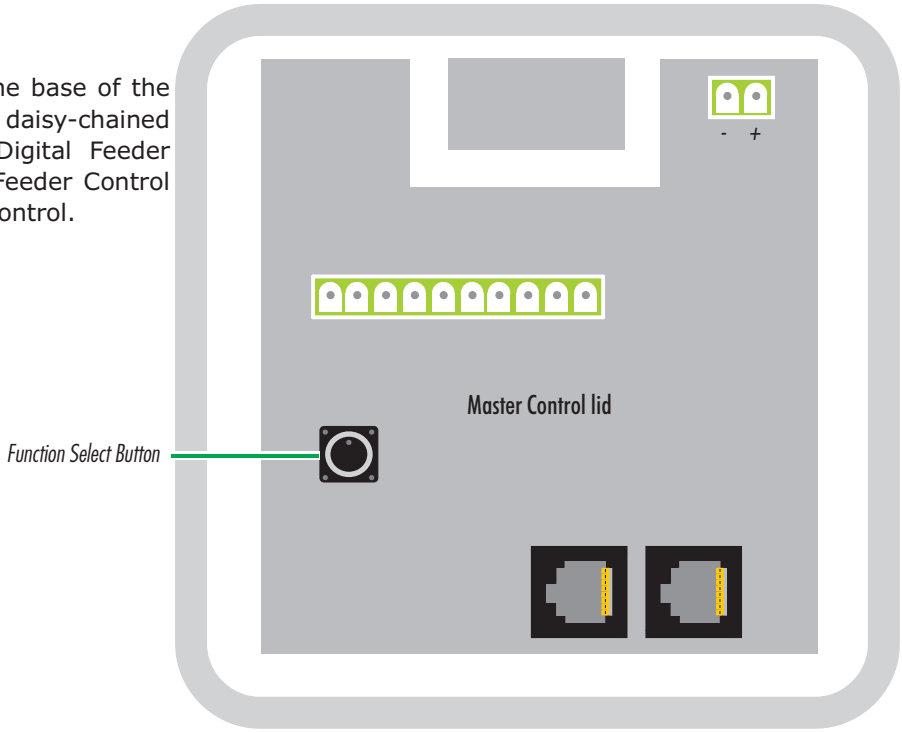


Setting up the Master Contol

The Master Control Connections

The connectors C and D are located in the base of the Master Control. Cat5e cable should be daisy-chained between connectors A and B on the Digital Feeder Controls, and then from the last Digital Feeder Control into either connector C or D on the Master Control.





Master Control: On / Off: Default = Off

Enter the setup mode by pressing the function select button once.

- 'Cn' will be shown in the ration display window;
- To set the Master Control on, rotate the ration selector clockwise and 'CY' will be shown in the ration display window;

Press the function select button to move onto setting up the number of digital controls.

NB - If connecting to ATL feeder and 1 x 396 Watt 12vDC power supply, only 12 feeders can be batch fed. If more feeders are required to be batch fed, a second 396 Watt 12vDC power supply will be required.

Setting The Number Of Digital Controls: Default = 01

This sets the number of Digital Feeder Controls on the system excluding the Master Control.

- 'St' will flash alternately and then '05' if there are 5 Digital Feeder Controls on the system;
- Rotate the ration selector clockwise to increase or anti-clockwise to decrease the number of Digital Feeder Controls;

Press the function select button to move onto setting up the feeding mode.

Setting up the Digital Feeder Control 2

Setting the Feed Mode: F1 / F2: Default F1

The Digital Feeder Control has 2 feeding modes. These are:

F1 - When the feed switch is flicked, the counter will count down to zero (00), the ration display will stay at zero (00) and a new ration has to be dialled up to feed another ration.

F2 -When the feed switch is flicked, the counter will count down to zero (00), the ration display will then return to the previous ration value and is ready to feed another ration immediately.

Select the feeding mode as follows:

- 'F1' will be shown in the ration display window;
- Rotate the ration selector clockwise once and 'F2' will be shown in the ration display window;
- Rotate the ration selector anti-clockwise to return to the previous feeder mode.

Press the function select button to move onto setting the feeder type.

Setting the Parlour Type: Hb / Ab / Ro: Default Hb

NOTE: For Software Post V3.30

The Digital Feeder Control supports 3 types of parlours. These are:

Hb - The Herringbone Parlour: This parlour type has 2 feeder calibration settings, one for the left feeder and one for the right.

Ab - The Abreast Parlour: This parlour has one feeder calibration setting.

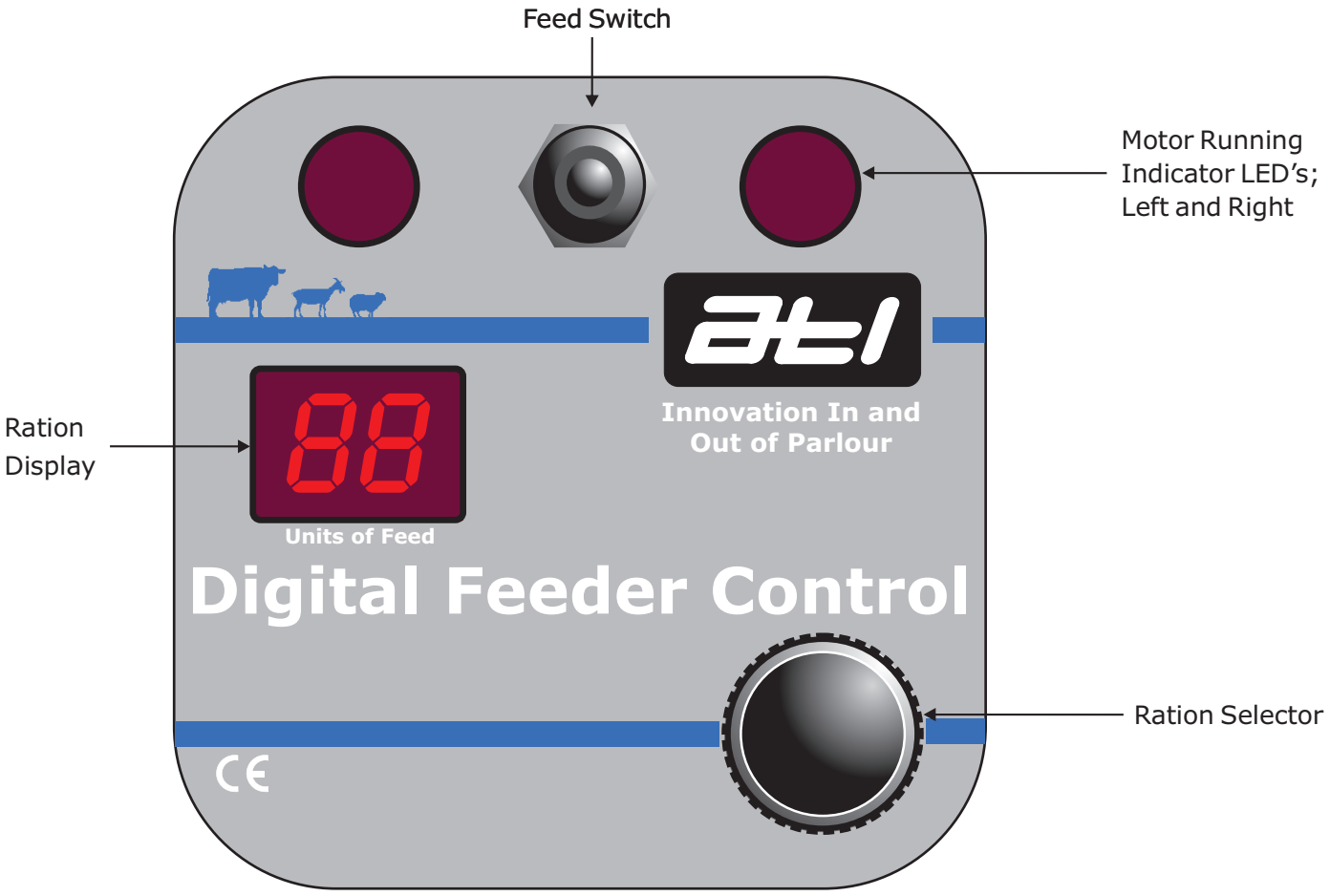
Ro - The Rotary Parlour: This enables individual feeding using the ATL dump box on a rotary parlour. For more information, please see the Rotary Parlour Dump Box manual.

Select the feeding mode as follows:

- 'Hb' will be shown in the ration display window;
- Rotate the ration selector clockwise once and 'Ab' or rotate clockwise twice and 'Ro' will be shown in the ration display window;
- Rotate the ration selector anti-clockwise to return to the previous parlour type.

Press the function select button to move onto setting the feeder type.

Using the Digital Feeder Control



The feeding procedure for the Digital Feeder Control is simple. Turning the ration selector knob increases or decreases the ration which is displayed in the window. For controls set up to drive a single feeder such as the ATL abreast feeder with a manual flap, flicking the feed switch in either direction will start the feeder, both indicators illuminate and the display counts down as the feed is dispensed until it reaches zero and the feeder motor turns off.

On controls which drive two feeders, flicking the feed switch to the left starts the feeder on the left and pressing it to the right starts the feeder on the right. The appropriate motor running indicator illuminates to show which 'side' is running and again, when the display reaches zero the feeder is turned off.

ATL abreast feeders with an automatic flap have a single feeder motor which operates regardless of whether the feed switch is pressed left or right, but the automatic flap is moved in the direction of the feed switch to divert the cake to that manger. Press and hold the feed switch for a few seconds to allow the auto flap to move and settle.

The ration selector is a rotary switch; it has no end stops and can be rotated through 360 degrees in either direction. As it is turned, the display increments or decrements, depending upon direction. The display number represents the multiple of portions (to a maximum of 99) set up using the timing pulse. So, for example if the installation was calibrated to deliver 500gms (about 1pound), a figure of '7' in the display window represents 7 x 500gms or 3.5kilograms.

Even when the feeder is running it is possible to increase or decrease the ration simply by turning the ration selector. The Digital Feeder Control will deliver the new ration.

If a feeder is already running, pressing the feed switch again for that side will have no effect. However, the opposite side feeder can be set to run by pressing the Feed Switch but it will not deliver the ration displayed since it is working in stand-by mode, running just so long as the Feed Switch is held over.

Setting the Ration Display to zero and pressing the feed switch will deliver cake continuously for as long as the switch is held over. This is a convenient stand-by feature.

The Digital Feeder Control Fault Finding Scheme

Digital Feeder Control Faults		
Symptom	**Possible Cause**	**Solution**
Feeding LED's fail to illuminate	Feeder jam	Check for feeder jam
Display flashes FU continuously	Output overload - 7Amp limit	Feeder motor drawing more than 7 Amps current Check for short circuit Turn dial to zero '00' and flick feed switch If fault persists, check and service the feeder motor
Display flashes PF continuously	Bad connection Global timing pulse failure	Check connections Check global timing pulse If faulty, use stand-by pulse* and contact dealer *Only short-term solution and only available on 4pt, 8pt or 12pt power supplies. Not on 60 Watt or 396 Watt 12vDC power supplies.
Control ceases to work	Power supply failure	Check power supply voltages Check control supply fuse If faulty, use stand-by supply* and contact dealer *Only short-term solution and only available on 4pt, 8pt or 12pt power supplies. Not on 60 Watt or 396 Watt 12vDC power supplies.
Decimal points flash on the display	Control is in power save mode	Turn dial or click switch to wake up control
Display flashes CE with a number	Master Control Communications failure	Check connections of Meridian bus to the control indicated by the number displayed.

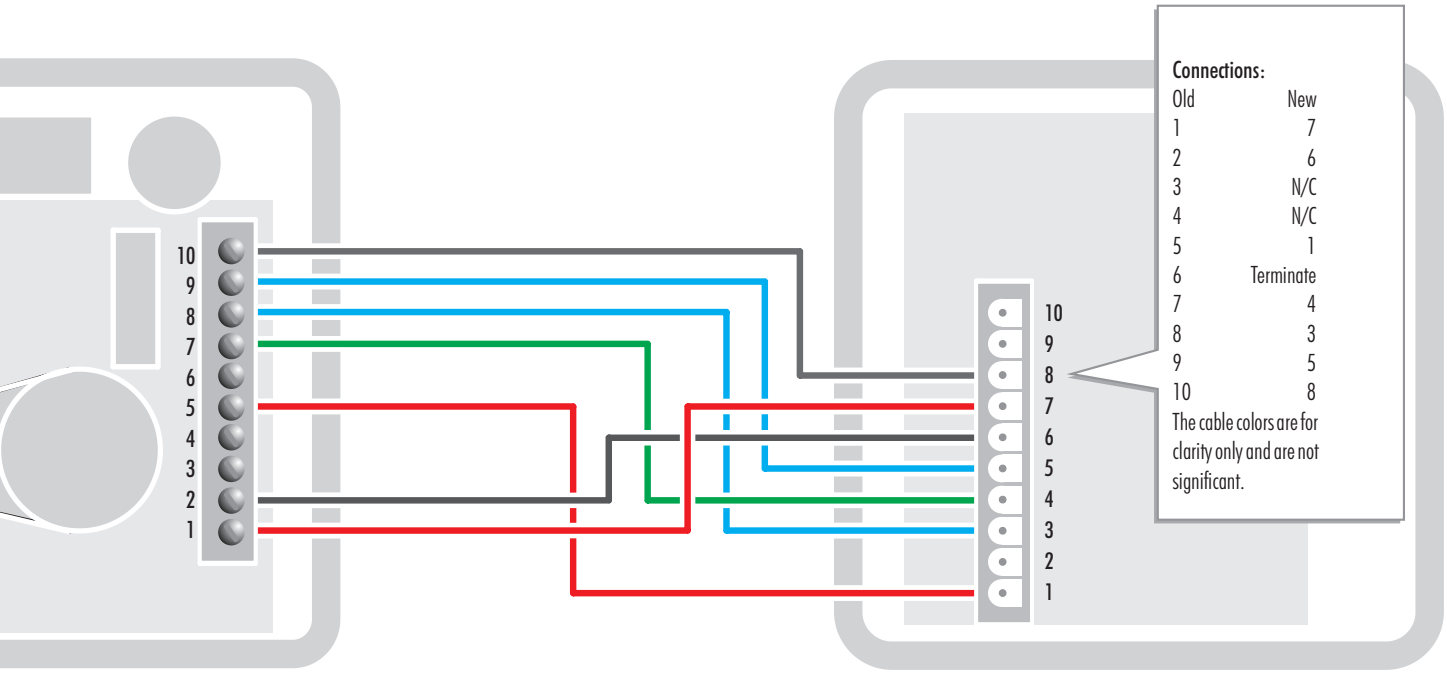
Datasheet 08A

Digitial Controls: Conversion from Mechanical Version to Electronic Version:

DOUBLE CONTROLS:

Old Mechanical Double Control

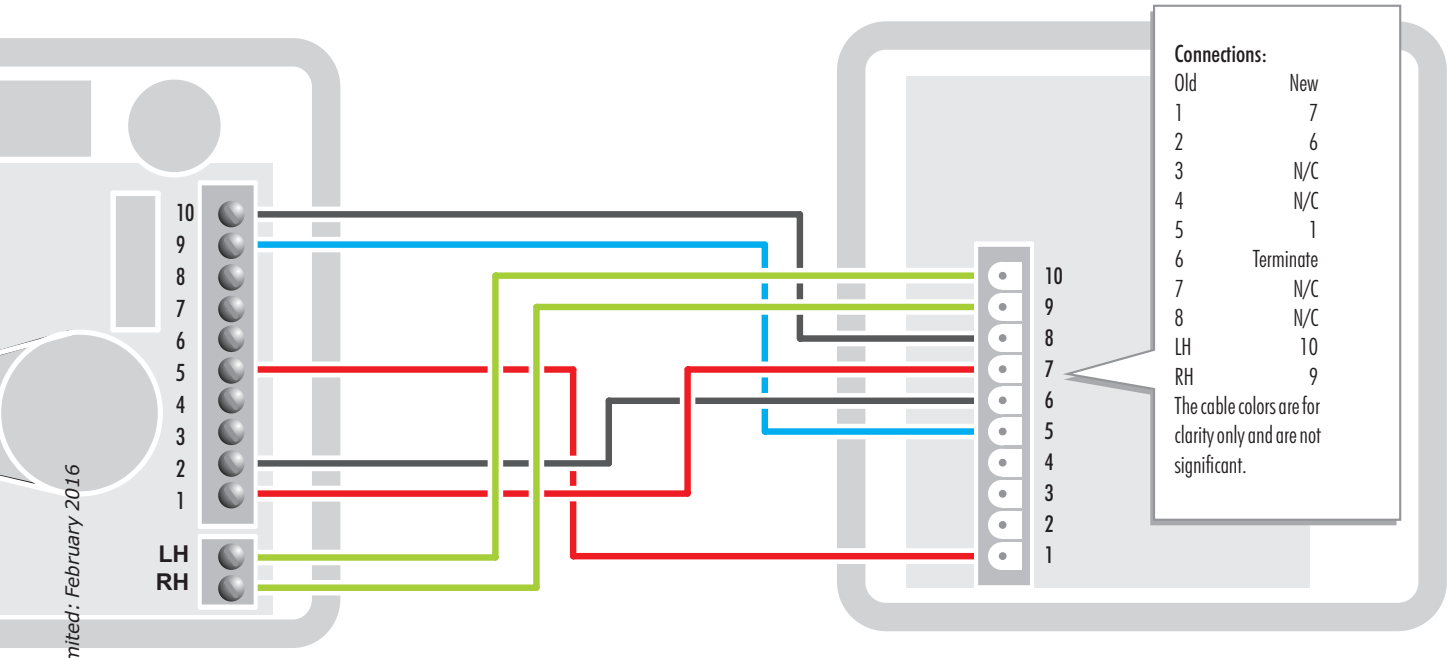
New Digital Double Control



DOUBLE CONTROLS:

Old Mechanical Single Control

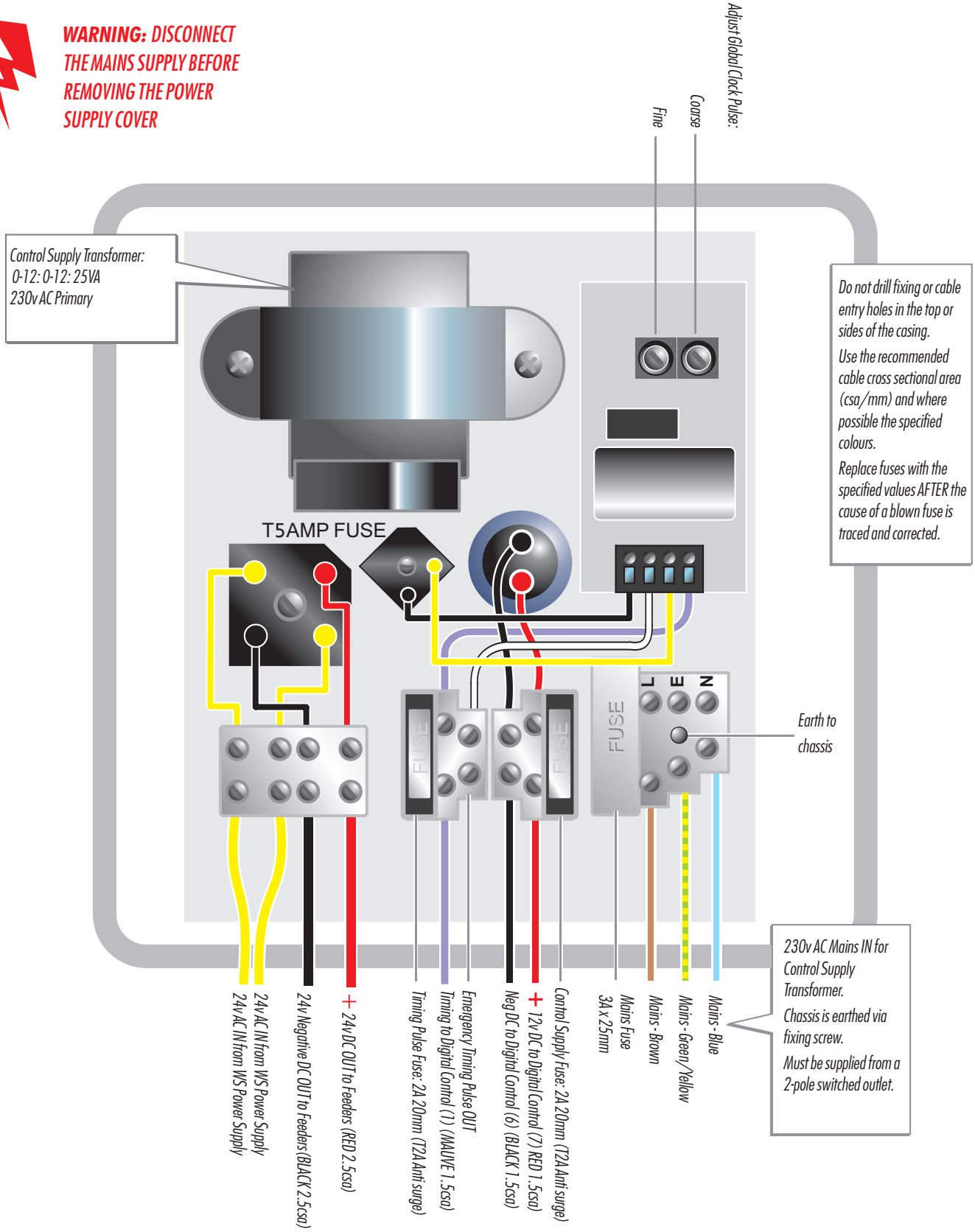
New Digital Single Control



Datasheet 08D

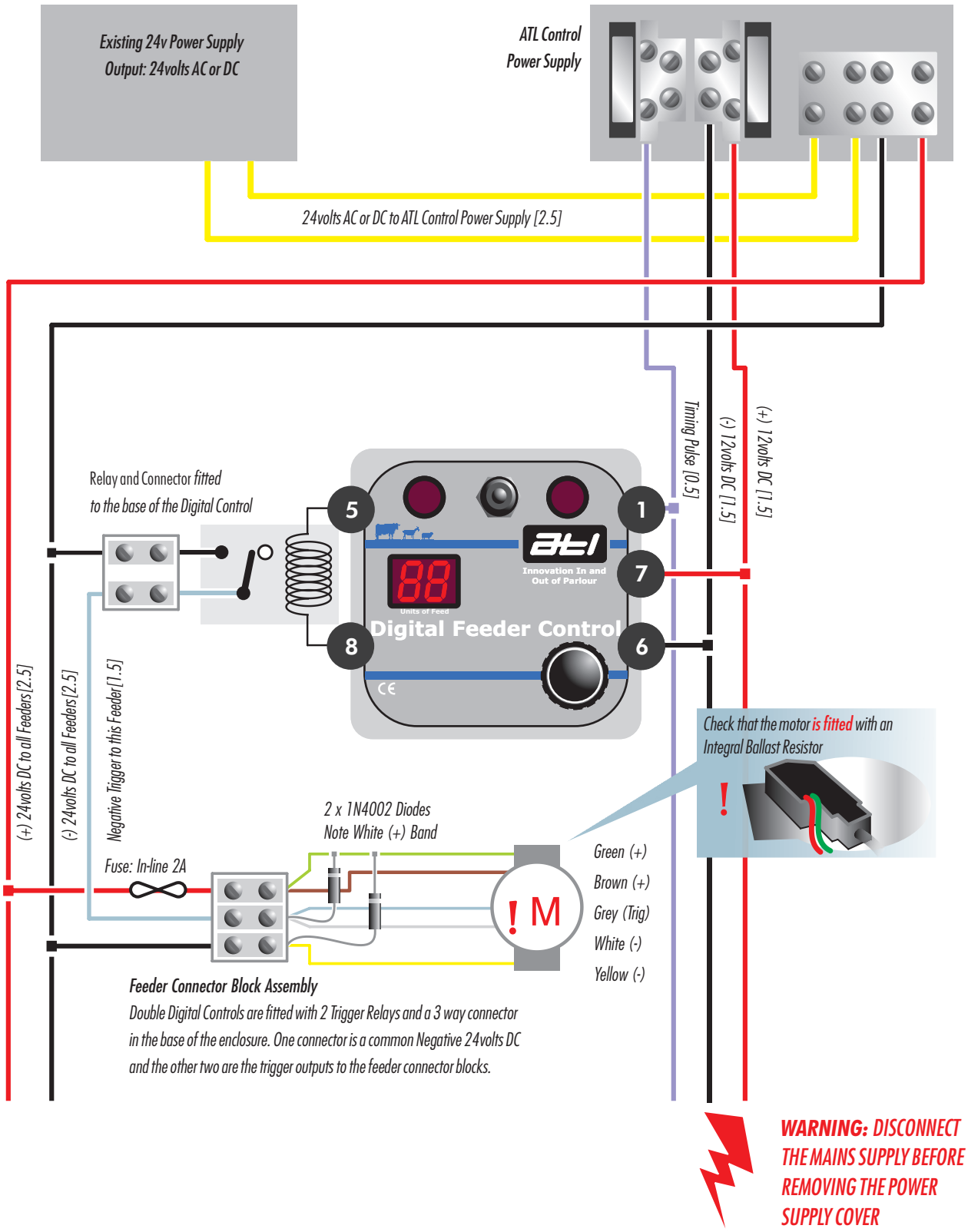
Digital Control Only Power Supply: Digital Controls driving Westfalia 24v Feeders: Existing 24vAC WS Supply for feeders.

WARNING: *DISCONNECT THE MAINS SUPPLY BEFORE REMOVING THE POWER SUPPLY COVER*



Datasheet 23A

24volt Feeder Connections using Existing 24volt Power Supply and ATL Control Power Supply. WestFalia 'M' type feeder WITH integral ballast resistor. Figures in square brackets refer to minimum cable csa (mm2).



Datasheet 23B

24volt Feeder Connections using Existing 24volt Power Supply and ATL Control Power Supply. WestFalia 'M' type feeder WITHOUT integral ballast resistor. Figures in square brackets refer to minimum cable csa (mm2).